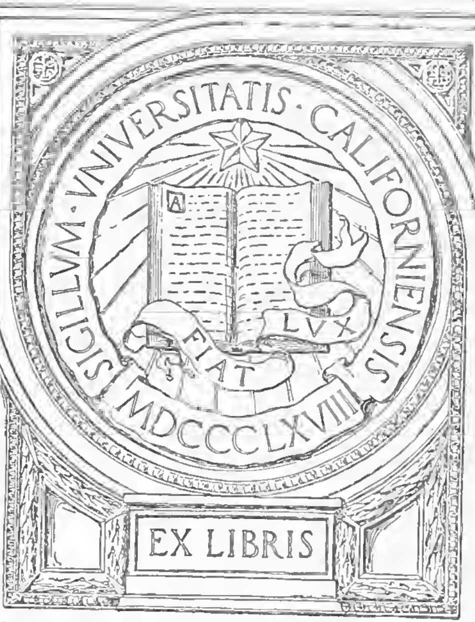
UNIVERSITY OF CALIFORNIA
SAN FRANCISCO MEDICAL CENTER
LIBRARY



EX LIBRIS

Digitized by the Internet Archive
in 2017 with funding from
The National Endowment for the Humanities and the Arcadia Fund

https://archive.org/details/californiawester39unse

California and Western Medicine

Official Publication of the
CALIFORNIA MEDICAL ASSOCIATION

Accredited Representative of the
NEVADA STATE MEDICAL ASSOCIATION

◆

PRINTED AND EDITED
for the
California Medical Association
Under the direction of the House of Delegates and Council
GEORGE H. KRESS, M. D., *Editor*

VOLUME XXXIX

JULY *to* DECEMBER, 1933

CALIFORNIA MEDICAL ASSOCIATION, FOUR FIFTY SUTTER
SAN FRANCISCO

OFFICERS
of the
CALIFORNIA MEDICAL ASSOCIATION
1933-1934

GENERAL OFFICERS

George G. Reinle 204 Dalziel Building, 532 Fifteenth Street, Oakland	*President*
Clarence G. Toland 902 Wilshire Medical Building, 1930 Wilshire Boulevard, Los Angeles	*President-Elect*
Edward M. Pallette 502 Wilshire Medical Building, 1930 Wilshire Boulevard, Los Angeles	*Speaker of the House of Delegates*
John H. Graves 977 Valencia Street, San Francisco	*Vice-Speaker of the House of Delegates*
T. Henshaw Kelly 830 Medico-Dental Building, 490 Post Street, San Francisco	*Chairman of Council*
Karl L. Schaupp 530 Medico-Dental Building, 490 Post Street, San Francisco	*Chairman of Executive Committee*
Charles A. Dukes 601 Wakefield Building, 426 Seventeenth Street, Oakland	*Chairman of Committee on Public Relations*
Emma W. Pope Room 2004, Four-Fifty Sutter, San Francisco	*Secretary-Treasurer*
George H. Kress 945 Roosevelt Building, 727 West Seventh Street, Los Angeles	*Editor*
Hartley F. Peart Room 1800, 111 Sutter Street, San Francisco	*General Counsel*
Hubert T. Morrow 837 Van Nuys Building, 210 West Seventh Street, Los Angeles	*Associate General Counsel*

COUNCILORS

W. W. Roblee (1935), 202 Mission Inn Rotonda, Riverside	First District
Carl R. Howson (1936), 711 Merritt Building, 307 West Eighth Street, Los Angeles	Second District
Henry J. Ullmann (1934), 1520 Chapala Street, Santa Barbara	Third District
Fred R. DeLappe (1935), 218 Beaty Building, 1024 J Street, Modesto	Fourth District
Alfred L. Phillips (1936), Farmers and Merchants Bank Building, Santa Cruz	Fifth District
Karl L. Schaupp (1934), 530 Medico-Dental Building, 490 Post Street, San Francisco	Sixth District
Oliver D. Hamlin (1935), Chairman, Federal Realty Building, Oakland	Seventh District
C. E. Schoff (1936), 322 Medico-Dental Building, 1127 Eleventh Street, Sacramento	Eighth District
Henry S. Rogers (1934), Petaluma	Ninth District

COUNCILORS-AT-LARGE

George G. Hunter (1935), 910 Pacific Mutual Building, 523 West Sixth Street, Los Angeles.

C. O. Tanner (1936), 3255 Fourth Street, San Diego.

William H. Kiger (1934), 911 Wilshire Medical Building, 1930 Wilshire Boulevard, Los Angeles.

Morton R. Gibbons (1935), Union Square Building, 350 Post Street, San Francisco.

T. Henshaw Kelly (1936), 830 Medico-Dental Building, 490 Post Street, San Francisco.

Junius B. Harris (1934), Medico-Dental Building, 1127 Eleventh Street, Sacramento.

STANDING COMMITTEES

Executive Committee

The President, the President-Elect, the Speaker of the House of Delegates, the Chairman of the Council, the Secretary-Treasurer, the Editor, the Chairman of the Auditing Committee, and the Chairman of the Committee on Public Relations.

Auditing Committee

O. D. Hamlin	Oakland
Morton R. Gibbons	San Francisco
Karl L. Schaupp (Chairman)	San Francisco

Committee on Associated Societies and Technical Groups

R. Manning Clarke (Chairman) Los Angeles	1934
Clifford Sweet, Oakland	1935
Wm. H. Geistweit, San Diego	1936

Committee on Extension Lectures

Robert T. Legge (Chairman) Berkeley	1934
James F. Churchill, San Diego	1935
J. Homer Woolsey, Woodland	1936

Secretary, ex officio

Committee on Health and Public Instruction

Langley Porter, San Francisco	1934
Fred B. Clarke (Chairman) Long Beach	1935
W. R. P. Clark, San Francisco	1936

Committee on History and Obituaries

George D. Lyman, San Francisco	1934
Charles D. Ball (Chairman) Santa Ana	1935
J. Marion Read, San Francisco	1936

Secretary, ex officio
Editor, ex officio

Committee on Hospitals, Dispensaries and Clinics

Karl L. Schaupp, San Francisco	1934
John C. Ruddock, Los Angeles	1935
Daniel Crosby (Chairman) Oakland	1936

Committee on Industrial Practice

Harry E. Zaiser, Orange	1934
Morton R. Gibbons, San Francisco	1935
Mott H. Arnold, San Diego	1936

Committee on Medical Defense

Henry Snure, Sr. (Chairman) Los Angeles	1934
George G. Reinle, Oakland	1935
Fred R. DeLappe, Modesto	1936

Committee on Medical Economics

Willard Stone, Pasadena	1934
John H. Graves (Chairman) San Francisco	1935
William R. Molony, Sr., Los Angeles	1936

Committee on Medical Education and Medical Institutions

H. A. L. Ryfkogel, San Francisco	1934
George Dock (Chairman) Pasadena	1935
George G. Hunter, Los Angeles	1936

Committee on Membership and Organization

LeRoy Brooks, San Francisco	1934
Harry H. Wilson (Chairman) Los Angeles	1935
Dewey R. Powell, Stockton	1936

Secretary, ex officio

Committee on Publications

Percy T. Magan, Los Angeles	1934
Ruggles A. Cushman, Talmage	1935
Frederick F. Gundrum, Sacramento	1936

Secretary, ex officio
Editor, ex officio

Committee on Public Policy and Legislation

E. T. Remmen, Glendale	1934
Junius B. Harris (Chairman) Sacramento	1935
Fred R. DeLappe, Modesto	1936

President, ex officio
President-Elect, ex officio

Committee on Scientific Work

Lemuel P. Adams, Oakland	1934
John Homer Woolsey, Woodland	1935
F. M. Pottenger, Monrovia	1936

H. O. Koefod, Secretary of Section on General Medicine.
Edwin M. Taylor, Secretary of Section on General Surgery.
Emma W. Pope (Chairman), ex officio.

Committee on Clinical and Research Prizes

Eugene S. Kilgore, San Francisco	1934
Arthur L. Bloomfield, San Francisco	1935
George Dock (Chairman) Pasadena	1936

Committee on Public Relations

Charles A. Dukes, M. D., Chairman
Emma W. Pope, M. D., Secretary

This Committee consists of ex officio members as follows: The President of the California Medical Association, George G. Reinle; the President-Elect, Clarence G. Toland; the Secretary-Treasurer, Emma W. Pope; the General Counsel, Hartley F. Peart; the Chairman of the Committee on Health and Public Instruction, Fred B. Clarke; the Chairman of the Committee on Hospitals, Dispensaries and Clinics, Daniel Crosby; the Chairman of the Committee on Industrial Practice, Morton R. Gibbons; the Chairman of the Committee on Membership and Organization, Harry H. Wilson; the Chairman of the Committee on Medical Economics, John H. Graves; the Chairman of the Committee on Public Policy and Legislation, Junius B. Harris; the Chairman of the California Medical Association Cancer Commission, Charles A. Dukes.

Communications for the Public Relations Department should be addressed to the Director, Dr. Walter M. Dickie, Room 2039, 450 Sutter Street, San Francisco.

Cancer Commission

Charles A. Dukes (Chairman) Oakland	1934
Lyell C. Kinney, Vice-Chairman San Diego	1934
Alson R. Kilgore, Secretary San Francisco	1934
Orville Meland, Los Angeles	1935
A. Herman Zeiler, Los Angeles	1935
Gertrude Moore, Oakland	1935
Harold Brunn, San Francisco	1936
Henry J. Ullmann, Santa Barbara	1936
Clarence G. Toland, Los Angeles	1936

Index—California and Western Medicine, Volume XXXIX
July to December, 1933

INDEX ARRANGEMENT
Sequence of Subheads in Index

This index is arranged under the following headings:

I. Authors.
II. Subjects—Titles of Papers.
III. Editorials.
IV. Editorial Comment Articles.
V. Bedside Medicine Articles.
VI. Medical History Articles.
VII. Miscellany Columns.
VIII. California Medical Association.
    (a) General.
    (b) Component County Societies.
    (c) Woman's Auxiliary.
IX. Department of Public Relations.
X. Cancer Commission.
XI. Deceased Members.
XII. Nevada State Medical Association.
XIII. Book Reviews.
XIV. Report of Medical Examiners.

* * *

Key to Abbreviations in This Index

Or.—Original Article.
C. R.—Case Report.
B. M.—Bedside Medicine.
E. C.—Editorial Comment.
C. N.—Clinical Notes.
L. M. H.—Lure of Medical History.

Index to Pages, Volume XXXIX, California and Western Medicine, July to December, 1933

Date of Issue	No. of Pages	Date of Issue	No. of Pages
July, 1933	1-72	October, 1933	217-288
August, 1933	73-144	November, 1933	289-360
September, 1933	145-216	December, 1933	361-432

* * *

Two Volumes Yearly

California and Western Medicine is annually issued in two volumes: the first, from January to June, inclusive; and the second from July to December, inclusive.

* * *

American Medical Association Quarterly Cumulative Index

Members who wish to consult a general medical index are referred to the Quarterly Cumulative Index of the American Medical Association.

I
AUTHORS—INDEX

A
PAGE
Adams, W. C.—Burns (B. M.) 264
Allen, Charles Lewis.—Reflections Concerning Neuropsychiatry (Or.) 298

B
Bailey, Fuller.—Functional Diseases of the Intestinal Tract (Or.) 250
Ball, Howard A.—Some Observations on the Altered Physiology of Hypophysectomized Albino Rats (Or.) 78
Baltimore, Louis.—Theobromin Reënforcement of Digitalis Action (E. C.) 133
Barrow, William H.—Acute Leukemia (C. R.) 195
Bath, Thomas W.—Opium Narcosis (C. R.) 334
Bernstein, Abraham, and Breitstein, Louis I.—Toxemias of Pregnancy (Or.) 42
Bingham, Elmer M.—Purulent Meningitis (C. R.) 259
Binkley, G W., Fox, D. S., Lunsford, C. J., and Thomson, R. R.—Bismuth Injections in the Treatment of Warts (Or.) 385
Bowen, Carl B.—Carcinoma of the Colon.—From a Roentgen Standpoint (Or.) 368
Bower, A. G., McKillop, J. E., and Vener, Hyman, I.—Clinical Tetanus (Or.) Part I 309
    Part II 374
Boyers, Luther Musson.—The Liver in Chronic Human Amebiasis—Its Relative Size (Or.) 239
    Human Amebiasis (Or.) 397
Breitstein, Louis I., and Bernstein, Abraham.—Toxemias of Pregnancy (Or.) 42
Breslin, Frank J.—Fractures—Their Treatment (Or.) 234
Breyer, John H.—Burns (B. M.) 265
Briggs, LeRoy—Migraine (B. M.) 53
Bumpus, Hermon C., Jr.—Prostatic Obstruction—Development of Its Surgical Treatment (Or.) 13
Bunnell, Sterling.—Burns (B. M.) 267
Butler, F. O.—Human Sterilization (B. M.) 199

C
Chambers, Stanley O., and Olsan, Harvey T.—Syphilitic Pneumonia (Or.) 185
Cheney, Garnett.—The Morphology of the Erythrocytes in Cirrhosis and Other Disorders of the Liver (Or.) 90
Cheney, William Fitch.—Addison's Disease (C. R.) 262
Christie, Arthur C.—Cancer—Present Trends in Its Treatment (Or.) 217
Clark, D. M., and Geyman, M. J.—Peptic Ulcer—Its Roentgen Diagnosis (Or.) 86
Coleman, George E.—Relapsing Fever in California (E. C.) 419
Collins, Donald C., and Rhodes, George K.—Acute Perforated Peptic Ulcers (Or.) 173
Cooder, Howard R.—Epilepsy in Children (Or.) 169
Crowe, Harold E.—Common Surgical Errors (E. C.) 60
Cunha, Felix.—Thomas Aquinas (L. M. H.) 256

D
Davis, Kenneth S.—Diverticulosis of the Duodenum (Or.) 229
Delprat, G. D., and Weeks, Alanson.—Postoperative Distention (E. C.) 132
Dietrich, Henry, McCleave, Thomas C., and Shaw, Edward B.—Procedures for Immunization Against Communicable Diseases (Or.) 219

E
Easton, D. E. F.—An Unusual Congenital Urogenital Anomaly (C. R.) 329
Elliot, Albert H., and Nuzum, Franklin R.—Insulin-Free Pancreatic Extract and the Circulatory Hormone (Kallikrein of Frey and Kraut) (Or.) 361
Emge, Ludwig A.—The Problem of Dysmenorrhea (Or.) 380
Ewer, Edward N.—Early Diagnosis of Pregnancy (B. M.) 336

F
PAGE
Ferguson, John.—Splenic Extract—Its Effect on the Calcium of Blood Serum (C. N.) 409
Fleming, Howard W.—Acute Ear Disease in Childhood (B. M.) 414
Fletcher, Russell.—Chronic Purulent Otitis Media (Or.) 32
Fox, D. S., Lunsford, C. J., Thomson, R. R., and Binkley, G. W.—Bismuth Injections in the Treatment of Warts (Or.) 385

G
Garland, L. H., and Rehfisch, J. M.—Carcinoma of the Breast—Its Roentgen Treatment (Or.) 401
Geiger, J. C.—Fifty Years of Progress in the Prevention of Disease (L. M. H.) Part I 327
    Part II 406
Gey, George O., Stone, Harvey B., and Owings, James C.—Living Grafts of Endocrine Glands (Or.):
    Part II 10
    Part III 81
Geyman, M. J., and Clark, D. M.—Peptic Ulcer—Its Roentgen Diagnosis (Or.) 86
Ghrist, David G.—Circulation and Postural Change (Or.) 161
Gibson, Thomas E.—Perinephritis (E. C.) 272
Gladstone, Ethel.—Johann Sigismund Elsholtz (1623-1688) (L. M. H.):
    Part II 45
    Part III 119
    Part IV 190
Gocher, T. E. P.—Muscle Training in Industrial Injuries (Or.) 21
Greenberg, David M., and Gunther, Lewis. — The Limited Value of the Information Obtained by a Blood Calcium Determination (E. C.) 206
Gunther, Lewis, and Greenberg, David M.—The Limited Value of the Information Obtained by a Blood Calcium Determination (E. C.) 206

H
Haining, Robert B., and Kimball, Theodore S.—Actinomycosis of the Kidney (Or.) 370
Hanson, Samuel. — Early Diagnosis of Pregnancy (B. M.) 335
Hein, Gordon E.—Migraine (B. M.) 54
Holder, Hall G.—Central Clinic Service—San Diego County Plan (Or.) 6
Hopkins, Helen.—Hyperpyrexia Baths and Epilepsy (Or.) 364
Hosford, George.—The Rôle of Hydrogen Ion Concentration (pH) in Certain Ocular Symptoms (E. C.) 419
Howson, Carl R.—Tuberculous Cavities—Their Significance, Prognosis and Treatment (Or.) 302
Hurwitz, Samuel H.—Urticaria (B. M.) 126
Hyland, C. M.—A Study of Five Hundred Consecutive Autopsies in Children (Or.) 151

I
Isaacs, Raphael, and Sturgis, Cyrus C.—Pernicious Anemia—Its Nature and a Consideration of Recent Advances in the Treatment of the Disease (Or.) 73

J
Jesberg, Simon.—Acute Ear Disease in Childhood (B. M.) 413

K
Kelsey, T. W.—Refraction (Or.) 25
Kimball, Theodore S., and Haining, Robert B.—Actinomycosis of the Kidney (Or.) 370
Kiskadden, W. S.—Adherent Scars—Their Treatment (Or.) 109
Knoefel, P. K.—The Nature of Anesthetic Shock and the Value of Premedication (E. C.) 344
Kositza, Lillian.—Diphtheria Immunization (Or.) 322
Kosky, Adolph W.—Early Diagnosis of Pregnancy (B. M.) 338

PAGE
Kreutzmann, Henry A. R.—Calcium Therapy in Urology (Or.) 29
Kroger, W. P.—The Adenomatous Goiter (Or.) 35
Kruse, Fred H.—Functional Disorders of the Colon (Or.) 97

L

Lane, Clayton.—Bladder-Neck Pathology in the Female (C. N.) 124
Lazard, Edmond M.—Porro Cesarean Section (Or.) 156
Loomis, Frederic M.—Sterility (Or.) 38
Lunsford, C. J., Thomson, R. R., Binkley, G. W., and Fox, D. S.—Bismuth Injections in the Treatment of Warts (Or.) 385

M

Macpherson, W. E.—Certain Relationships Between the Pancreas and the Liver in Carbohydrate Metabolism (E. C.) 273
Magee, George R.—Tularemia (E. C.) 421
Malmgren, George E.—Factitial Proctitis (C. R.) 258
Manwaring, W. H.—The Growing Complexities of Serum—Therapeutic Logic (E. C.):
  Histological Specificity, Part VI 59
  Krueger Pertussis Antigen, The, Part VII 133
  Allergic Inactivation of Diphtheria Antitoxin, Part VIII 206
 Immunologic Effects of Alkaline Diets (E. C.) 272
 Flatulent Diarrhea Allegedly Due to Milk Pasteurization (E. C.) 343
Marxer, W. L.—Mercurial Dermatitis (C. R.) 261
Mathews, Samuel S.—Fractures of the Forearm (Or.) 177
Maxson, Louis H.—Spinal Anesthesia (Or.) 292
Maynard, Merlin T-R.—Urticaria (B. M.) 125
McArthur, A. W., and Vinks, W. A.—Santonin Poisoning (C. N.) 409
McCleave, Thomas C., Shaw, Edward B., and Dietrich, Henry.—Procedures for Immunization Against Communicable Diseases (Or.) 219
McKillop, J. E., Vener, Hyman I., Bower, A. G.—Clinical Tetanus (Or.) Part I 309
 Part II 374
McLaughlin, R. C.—Unusual Mastoiditis (C. R.) 333
Miller, Hyman.—The Mechanism of Traumatic Shock (E. C.) 344
Miller, Hyman, and Piness, George.—Asthma in Childhood (Or.) 319
Moore, Gertrude.—Early Diagnosis of Pregnancy (B. M.) 338
Moore, Paul H.—Duodenal Stasis (C. R.) 48
Myers, Glenn.—Commitment Laws in California and Elsewhere (Or.) 313

N

Negley, J. C.—Cold Quartz Ultraviolet Light Therapy in Urology (Or.) 226
Nuzum, Franklin R., and Elliot, Albert H.—Insulin-Free Pancreatic Extract and the Circulatory Hormone (Kallikrein of Frey and Kraut) (Or.) 361

O

Olsan, Harvey T., and Chambers, Stanley O.—Syphilitic Pneumonia (Or.) 185
Orbison, Thomas J.—Murderers' Row (Or.) 104
Owings, James C., Gey, George O., and Stone, Harvey B.—Living Grafts of Endocrine Glands (Or.):
 Part II 10
 Part III 81

P

Palmer, Caroline B.—The Future of Anesthesiology as a Medical Specialty (Or.) 148
Peart, Hartley F.—The Physician's Interest in the Making of a Will (Or.) 20
Pflueger, Otto H.—Treatment of Neck Glands in Cancer of Lip, Tongue, and Mouth (Or.) 391
Piness, George, and Miller, Hyman.—Asthma in Childhood (Or.) 319
Pischel, Dohrmann K.—Retinal Detachment—Diathermy Puncture and Coagulation (E. C.) 421

Q

PAGE
Quinlan, John F.—Significance of Occult Blood in Stools by the Benzidin Method (Or.) 254

R

Reinle, George G.—Alameda County Plan (Or.) 1
 Care of the Indigent and Semi-Indigent Sick (Or.) 289
Rehfisch, J. M., and Garland, L. H.—Carcinoma of the Breast—Its Roentgen Treatment (Or.) 401
Rhodes, George K., and Collins, Donald C.—Acute Perforated Peptic Ulcers (Or.) 173
Richter, Ina M., and Rickard, John F.—Pregnancy as a Complication of Heart Disease (Or.) 306
Rickard, John F., and Richter, Ina M.—Pregnancy as a Complication of Heart Disease (Or.) 306

S

Saunders, John B. de C. M.—The Knee Joint—Its Functional Anatomy and the Mechanism of Certain Injuries (Or.) 83
Scholtz, Moses.—Urticaria (B. M.) 125
 Compensable Industrial Dermatoses (Or.) 165
Schulze, Margaret.—Postmenopausal Hemorrhage (Or.) 158
Scott, Alfred J.—Fetal Peritonitis (C. R.) 410
Shaw, Edward B., Dietrich, Henry, and McCleave, Thomas C.—Procedures for Immunization Against Communicable Diseases (Or.) 219
Sherrill, James W.—Cardiovascular Disease in Diabetes Mellitus (Or.), Part II 17
Smiley, Kenneth E.—Instrumental Perforation of the Rectum (C. R.) 329
Smith, Wallace B.—Acute Ear Disease in Childhood (B. M.) 412
Snure, Henry.—Mediastinal Pleurisy (E. C.) 58
Spiers, H. W.—Skeletal Traction (C. N.) 123
Stanley, L. L.—Human Sterilization (B. M.) 200
Stevens, George M.—Vaccination for Smallpox—The Three-Point Chisel Method (Or.) 243
Stevens, William E.—Female Bladder Injuries Incident to Surgery (Or.) 388
Stone, Harvey B.—Malignant Diseases of the Colon (Or.) 145
Stone, Harvey B., Owings, James C., and Gey, George O.—Living Grafts of Endocrine Glands (Or.):
 Part II 10
 Part III 81
Sturgis, Cyrus C., and Isaacs, Raphael.—Pernicious Anemia—Its Nature and a Consideration of Recent Advances in the Treatment of the Disease (Or.) 73
Sullivan, Walter J.—Carcinoid Appendix (C. R.) 49

T

Taussig, Lawrence R.—Hypersensitivity of the Skin to Light (Or.) 301
Thomson, R. R., Binkley, G. W., Fox, D. S., and Lunsford, C. J.—Bismuth Injections in the Treatment of Warts (Or.) 385
Tiber, Leon J.—Rupture of Uterus (C. R.) 193
Twitchell, Edward W.—Migraine (B. M.) 52

V

Vener, Hyman I., Bower, A. G., and McKillop, J. E.—Clinical Tetanus (Or.) Part I 309
 Part II 374
Vinks, W. A., and McArthur, A. W.—Santonin Poisoning (C. N.) 409

W

Watkins, James T.—Fractures of the Spine (Or.) 246
Weaver, Don D.—Saccular Dilatation of Saphenous Vein (C. R.) 331
Weeks, Alanson, and Delprat, G. D.—Postoperative Distention (E. C.) 132
Wesson, Miley B.—Infections of the Genito-Urinary Tract (Or.) 113
Whalman, Harold F.—Corneal Ulcer—Its Treatment (Or.) 181
White, Henry L.—A New Vaginal Retractor (C. N.) 332
Williams, Francis.—Further Observations on Vaccine Therapy in Respiratory Conditions (C. N.) 194

Y

Yaker, David N.—Foreign Body in the Ischiorectal Space (C. R.) 50

II

SUBJECTS—INDEX

A

PAGE
Actinomycosis of the Kidney.—Theodore S. Kimball and Robert B. Haining (Or.) 370
Acute Ear Disease in Childhood.—Wallace B. Smith, Simon Jesberg, and Howard W. Fleming (B. M.) 412
Acute Leukemia.—William H. Barrow (C. R.) 195
Acute Perforated Peptic Ulcers.—George K. Rhodes and Donald C. Collins (Or.) 173
Addison's Disease.—William Fitch Cheney (C. R.) 262
Adenomatous Goiter, The.—W. P. Kroger (Or.) 35
Adherent Scars—Their Treatment.—W. S. Kiskadden (Or.) 109
Alameda County Plan.—George G. Reinle (Or.) 1
Allergic Inactivation of Diphtheria Antitoxin.—W. H. Manwaring (E. C.) 206
Amebiasis, Human.—Luther Musson Boyers (Or.) 397
Anesthesiology as a Medical Specialty, The Future of.—Caroline B. Palmer (Or.) 149
Anesthetic Shock and the Value of Premedication, The Nature of.—P. K. Knoefel (E. C.) 344
Asthma in Childhood.—Hyman Miller and George Piness (Or.) 319
Autopsies in Children, A Study of Five Hundred Consecutive.—C. M. Hyland (Or.) 151

B

Bismuth Injections in the Treatment of Warts.—C. J. Lunsford, R. R. Thomson, G. W. Binkley, and D. S. Fox (Or.) 385

PAGE
Bladder-Neck Pathology in the Female.—Clayton Lane (C. N.) 124
Burns.—W. C. Adams, John H. Breyer, and Sterling Bunnell (B. M.) 264

C

Calcium Therapy in Urology.—Henry A. R. Kreutzmann (Or.) 29
Cancer—Present Trends in Its Treatment.—Arthur C. Christie (Or.) 217
Cancer of Lip, Tongue, and Mouth, Treatment of Neck Glands in.—Otto H. Pflueger (Or.) 391
Carcinoid Appendix.—Walter J. Sullivan (C. R.) 49
Carcinoma of the Breast—Its Roentgen Treatment.—J. M. Rehfisch and L. H. Garland (Or.) 401
Carcinoma of the Colon—From a Roentgen Standpoint.—Carl B. Bowen (Or.) 368
Cardiovascular Disease in Diabetes Mellitus.—James W. Sherrill (Or.), Part II 17
Care of the Indigent and Semi-Indigent Sick.—George G. Reinle (Or.) 289
Central Clinic Service—San Diego County Plan.—Hall G. Holder (Or.) 6
Certain Relationships Between the Pancreas and the Liver in Carbohydrate Metabolism.—W. E. Macpherson (E. C.) 273
Chronic Purulent Otitis Media.—Russell Fletcher (Or.) 32

PAGE

Circulation and Postural Change.—David G. Ghrist (Or.) 161
Clinical Tetanus.—Hyman I. Vener, A. G. Bower, and J. E. McKillop (Or.), Part I 309
Part II 374
Cold Quartz Ultraviolet Light Therapy in Urology.—J. C. Negley (Or.) 226
Commitment Laws in California and Elsewhere.—Glenn Myers (Or.) 313
Common Surgical Errors.—Harold E. Crowe (E. C.) 60
Compensable Industrial Dermatoses (Or.) 165
Corneal Ulcer—Its Treatment.—Harold F. Whalman (Or.) 181

D

Diphtheria Immunization.—Lillian Kositza (Or.) 322
Diverticulosis of the Duodenum.—Kenneth S. Davis (Or.) 229
Duodenal Stasis.—Paul H. Moore (C. R.) 48
Dysmenorrhea, The Problem of.—Ludwig A. Emge (Or.) 380

E

Early Diagnosis of Pregnancy.—Samuel Hanson, Edward N. Ewer, Adolph W. Kosky, and Gertrude Moore (B. M.) 335
Epilepsy in Children.—Howard R. Cooder (Or.) 169

F

Factitial Proctitis.—George E. Malmgren (C. R.) 258
Female Bladder Injuries Incident to Surgery.—William E. Stevens (Or.) 388
Fetal Peritonitis.—Alfred J. Scott (C. R.) 410
Fifty Years of Progress in the Prevention of Disease.—J. C. Geiger (L. M. H.), Part I 327
Part II 406
Foreign Body in the Ischiorectal Space.—David N. Yaker (C. R.) 50
Fractures of the Forearm.—Samuel S. Mathews (Or.) 177
Fractures of the Spine.—James T. Watkins (Or.) 246
Fractures—Their Treatment.—Frank J. Breslin (Or.) 234
Functional Diseases of the Intestinal Tract.—Fuller Bailey (Or.) 250
Functional Disorders of the Colon.—Fred H. Kruse (Or.) 97
Further Observations on Vaccine Therapy in Respiratory Conditions.—Francis Williams (C. N.) 194
Future of Anesthesiology as a Medical Specialty, The.—Caroline B. Palmer (Or.) 148

G

Growing Complexities of Serum—Therapeutic Logic, The.—W. H. Manwaring:
  Histological Specificity, Part VI 59
  The Krueger Pertussis Antigen, Part VII 133

H

Human Amebiasis.—Luther Musson Boyers (Or.) 397
Human Sterilization.—F. O. Butler and L. L. Stanley (B. M.) 199
Hyperpyrexia Baths and Epilepsy.—Helen Hopkins (Or.) 364
Hypersensitivity of the Skin to Light.—Lawrence R. Taussig (Or.) 301

I

Immunologic Effects of Alkaline Diets.—W. H. Manwaring (E. C.) 272
Infections of the Genito-Urinary Tract.—Miley B. Wesson (Or.) 113
Instrumental Perforation of the Rectum.—Kenneth E. Smiley (C. R.) 329
Insulin-Free Pancreatic Extract and the Circulatory Hormone (Kallikrein of Frey and Kraut).—Franklin R. Nuzum and Albert H. Elliot (Or.) 361

J

Johann Sigismund Elsholtz.—Ethel Gladstone (L. M. H):
  Part II 45
  Part III 119
  Part IV 190

K

Knee Joint, The—Its Functional Anatomy and the Mechanism of Certain Injuries.—John B. de C. Saunders (Or.) 83

L

Limited Value of the Information Obtained by a Blood Calcium Determination, The.—David M. Greenberg and Lewis Gunther (E. C.) 206
Liver in Chronic Human Amebiasis—Its Relative Size, The.—Luther Musson Boyers (Or.) 239
Living Grafts of Endocrine Glands.—Harvey B. Stone, James C. Owings, and George O. Gey (Or.):
  Part II 10
  Part III 81

M

Malignant Disease of the Colon.—Harvey B. Stone (Or.) 145
Mechanism of Traumatic Shock, The.—Hyman Miller (E. C.) 344
Mediastinal Pleurisy.—Henry Snure (E. C.) 58
Mercurial Dermatitis.—W. L. Marxer (C. R.) 261
Migraine.—Edward W. Twitchell, Le Roy Briggs, and Gordon E. Hein (B. M.) 52
Morphology of the Erythrocytes in Cirrhosis and Other Disorders of the Liver, The.—Garnett Cheney (Or.) 90
Murderers' Row.—Thomas J. Orbison (Or.) 104
Muscle Training in Industrial Injuries.—T. E. P. Gocher (Or.) 21

N PAGE

Nature of Anesthetic Shock and the Value of Premedication, The.—P. K. Knoefel (E. C.) 344
Neuropsychiatry, Reflections Concerning.—Charles Lewis Allen (Or.) 298
New Vaginal Retractor, A.—Henry L. White (C. N.) 333

O

Opium Narcosis.—Thomas W. Bath (C. R.) 334
Otitis Media, Chronic Purulent.—Russell Fletcher (Or.) 32

P

Peptic Ulcer—Its Roentgen Diagnosis.—M. J. Geyman and D. M. Clark (Or.) 86
Peptic Ulcers, Acute Perforated.—George K. Rhodes and Donald C. Collins (Or.) 173
Perinephritis.—Thomas E. Gibson (E. C.) 272
Pernicious Anemia—Its Nature and a Consideration of Recent Advances in the Treatment of the Disease.—Cyrus C. Sturgis and Raphael Isaacs (Or.) 73
Physical Therapy in California—A Special Committee Report (Or.) 297
Physician's Interest in the Making of a Will, The.—Hartley F. Peart (Or.) 20
Porro Cesarean Section.—Edmond M. Lazard (Or.) 156
Postmenopausal Hemorrhage.—Margaret Schulze (Or.) 158
Postoperative Distention.—Alanson Weeks and G. D. Delprat (E. C.) 132
Pregnancy, Early Diagnosis of.—Samuel Hanson, Edward N. Ewer, Adolph W. Kosky, and Gertrude Moore (B. M.) 335
Pregnancy as a Complication of Heart Disease.—Ina M. Richter and John F. Rickard (Or.) 306
Problem of Dysmenorrhea, The.—Ludwig A. Emge (Or.) 380
Procedures for Immunization Against Communicable Diseases.—Edward B. Shaw, Henry Dietrich, and Thomas C. McCleave (Or.) 219
Prostatic Obstruction—Development of Its Surgical Treatment.—Herman C. Bumpus, Jr. (Or.), Part II 13
Purulent Meningitis.—Elmer M. Bingham (C. R.) 259

R

Reflections Concerning Neuropsychiatry.—Charles Lewis Allen (Or.) 298
Refraction.—T. W. Kelsey (Or.) 25
Relapsing Fever in California.—George F. Coleman (E. C.) 420
Retinal Detachment—Diathermy Puncture and Coagulation.—Dohrmann K. Pischel (E. C.) 421
Retractor, A New Vaginal.—Henry L. White (C. N.) 332
Rôle of Hydrogen Ion Concentration (pH) in Certain Ocular Symptoms, The.—George N. Hosford (E. C.) 419
Rupture of Uterus.—Leon J. Tiber (Or.) 193

S

Saccular Dilatation of Saphenous Vein.—Don D. Weaver (C. R.) 331
San Diego County Plan—Central Clinic Service.—Hall G. Holder (Or.) 6
Santonin Poisoning.—W. A. Vinks and A. W. McArthur (C. N.) 409
Significance of Occult Blood in Stools by the Benziden Method.—John F. Quinlan (Or.) 254
Skeletal Traction.—H. W. Spiers (C. N.) 123
Some Observations on the Altered Physiology of Hypophysectomized Albino Rats (Or.) 78
Spinal Anesthesia.—Louis H. Maxson (Or.) 292
Splenic Extract—Its Effect on the Calcium of Blood Serum.—John Ferguson (C. N.) 409
Sterility.—Frederic M. Loomis (Or.) 38
Study of Five Hundred Consecutive Autopsies in Children, A.—C. M. Hyland (Or.) 151
Syphilitic Pneumonia.—Harvey T. Olsan and Stanley O. Chambers (Or.) 185

T

Tetanus, Clinical.—Hyman I. Vener, A. G. Bower, and J. E. McKillop (Or.) Part I 309
Part II 374
Theobromin Reënforcement of Digitalis Action.—Louis Baltimore (E. C.) 133
Thomas Aquinas.—Felix Cunha (L. M. H.) 256
Toxemias of Pregnancy.—Louis I. Breitstein and Abraham Bernstein (Or.) 42
Treatment of Neck Glands in Cancer of Lip, Tongue, and Mouth.—Otto H. Pflueger (Or.) 391
Tuberculous Cavities—Their Significance, Prognosis and Treatment.—Carl R. Howson (Or.) 302
Tularemia.—George R. Magee (E. C.) 421

U

Unusual Congenital Urogenital Anomaly, An.—D. E. F. Easton (C. R.) 329
Unusual Mastoiditis.—R. C. McLaughlin (C. R.) 333
Urticaria.—Merlin T-R. Maynard, Moses Scholtz, and Samuel H. Hurwitz (B. M.) 125

V

Vaccination for Smallpox—The Three-Point Chisel Method.—George M. Stevens (Or.) 243
Vaccine Therapy in Respiratory Conditions, Further Observations on.—Francis Williams (C. N.) 194

W

Warts—Bismuth Injections in the Treatment of.—C. J. Lunsford, R. R. Thomson, G. W. Binkley, and D. S. Fox (Or.) 385

III

EDITORIALS—INDEX

PAGE
Alameda County Plan 343
Alameda and San Diego Medical Service Plans, The 56
California Board of Medical Examiners and European Graduates 416
California Medical Association Extension Lectures 343
California's First Medical Author 270
California's New Clinic Law 204
"Committee on Professional Conduct, The"—A New Procedure Inaugurated by the San Francisco County Medical Society 128
County Health and Institutions Commissions—Santa Clara's Example 340
Decreased Budget of State Board of Health 58
Eighty-Fourth Annual Session, A. M. A.—Some House of Delegates Proceedings 129
Federal Emergency Relief Administration—California Medical Association Coöperation 340
PAGE
Library Building of the Los Angeles County Medical Association 128
Making a Will 57
Nobel Prize in Medicine Comes to California 418
NRA and the Medical Profession 269
Persistent Propaganda 205
San Fernando Plan—A Health Center Curative Clinic Experiment, The 417
Study of Public Health Problems—A Plea for County Society Coöperation 270
Superior Court Decides Against Pay Patients in County Hospitals 342
Two Papers of Special Interest 205
Use of the Injunction in Medical Practice, The 56
Violation of State Narcotic Act Dangerous 418

IV

EDITORIAL COMMENT ARTICLES—INDEX

PAGE
Allergic Inactivation of Diphtheria Antitoxin.—W. H. Manwaring 206
Certain Relationships Between the Pancreas and the Liver in Carbohydrate Metabolism.—W. E. Macpherson 273
Common Surgical Errors.—Harold E. Crowe 60
Flatulent Diarrhea Allegedly Due to Milk Pasteurization.—W. H. Manwaring 343
Growing Complexities of Serum—Therapeutic Logic, The.—W. H. Manwaring:
  Histological Specificity, Part VI 59
  The Krueger Pertussis Antigen, Part VII 133
Immunologic Effects of Alkaline Diets.—W. H. Manwaring 272
Limited Value of the Information Obtained by a Blood Calcium Determination, The.—David M. Greenberg and Lewis Gunther 206
PAGE
Mechanism of Traumatic Shock, The.—Hyman Miller 344
Mediastinal Pleurisy.—Henry Snure 58
Nature of Anesthetic Shock and the Value of Premedication, The.—P. K. Knoefel 344
Perinephritis.—Thomas E. Gibson 272
Postoperative Distention.—Alanson Weeks and G. D. Delprat 132
Relapsing Fever in California.—George E. Coleman 420
Retinal Detachment—Diathermy Puncture and Coagulation.—Dohrmann K. Pischel 421
Rôle of Hydrogen Ion Concentration (pH) in Certain Ocular Symptoms, The.—George N. Hosford 419
Theobromin Reënforcement of Digitalis Action.—Louis Baltimore 133
Tularemia.—George R. Magee 421

V

BEDSIDE MEDICINE ARTICLES—INDEX

PAGE
Acute Ear Disease in Childhood.—Wallace B. Smith, Simon Jesberg, and Howard W. Fleming 412
Burns.—W. C. Adams, John H. Breyer, and Sterling Bunnell 264
Early Diagnosis of Pregnancy.—Samuel H. Hanson, Edward N. Ewer, Adolph W. Kosky, and Gertrude Moore 335
PAGE
Human Sterilization.—F. O. Butler and L. L. Stanley 199
Migraine.—Edward W. Twitchell ,LeRoy Briggs, and Gordon E. Hein 52
Urticaria.—Merlin T-R. Maynard, Moses Scholtz, and Samuel H. Hurwitz 125

VI

MEDICAL HISTORY ARTICLES—INDEX

PAGE
Fifty Years of Progress in the Prevention of Disease. —J. C. Geiger:
  Part I 327
  Part II 406
PAGE
Johann Sigismund Elsholtz.—Ethel Gladstone:
  Part II 45
  Part III 119
  Part IV 190
Thomas Aquinas.—Felix Cunha 256

VII

MISCELLANY COLUMNS—INDEX

PAGE
Board of Medical Examiners of the State of California:
  Board Hearings 360
  News Items 72, 144, 216, 286, (Oct.) Adv. p. 17, 360; (Dec.) Adv. p. 18
  Nineteen Hundred and Thirty-Three Report of Board of Medical Examiners 288
  Results of Board of Medical Examiners' Examinations:
    San Francisco, July 11 to 13, 1933 288
    Los Angeles, July 25 to 27, 1933 288
    Sacramento, October 17 to 19, 1933 432
California's Clinic Law—Assembly Bill No. 1277, Chapter 756—Approved by Governor James Rolph, Jr., June 5, 1933 214
Correspondence:
  Subject: Communication from the American Social Hygiene Association concerning a film, "Damaged Lives."—William F. Snow 357
  Subject: Communication from the California Director of Public Health on the retirement of President John H. Graves from the California State Board of Health.—Giles S. Porter 431
  Subject: Communication from the Dental Educational Council of America on certain recommendations of the Commission on Medical Education. —Albert L. Midgley 144
PAGE
  Subject: Communication from the Director of Public Health of San Francisco regarding "Body and Health" radio broadcasts.—J. C. Geiger 357
  Subject: Communication regarding Assembly Bill 539 (Commitment of Mental Patients).—Glenn Myers 143
  Subject: Communication to the California Medical Association secretary from the dean of the University of California Medical School, regarding procedures with clinic patients.—Langley Porter 287
  Subject: Excerpts from a communication from a well-known eastern colleague 143
  Subject: Fraudulent saleswoman of gowns.—Peter A. Jordan 357
  Subject: Insurance fakir—Colonial Mutual Life Association.—M. T. Emanuel 357
  Subject: Request by State Medical Library for cooperation in carrying on its work.—Marjorie Utt 356
  Subject: Some comments on what a State Board Examination reveals as lacking in the modern-day curriculum.—W. H. Geistweit 357
County Hospital Court Decision, An Important—Kern County Supervisors Lose in County Hospital Policy Injunction Suit 359
Federal Emergency Relief Plan 358
News 69, 142, 213, 286, 355, 430
Twenty-Five Years Ago 72, 144, 216, 288, 360, 432

VIII

CALIFORNIA MEDICAL ASSOCIATION PROCEEDINGS—INDEX

(*a*) General

PAGE
California Medical Association 64, 140, 210, 274, 346, 422
Proposed Amendments to the Constitution (Second Publication) 346
Extension Lecture Program 277
PAGE
Minutes of the Council:
  Two Hundred and Nineteenth Meeting (Meeting of May 27, 1933) 274
Minutes of the Executive Committee (Digest Form):
  One Hundred and Thirty-Eighth Meeting (Meeting of August 19, 1933) 277

(*b*) Component County Societies

PAGE
Contra Costa 280, 346, 422
Imperial 140
Mendocino 280
Orange 64, 280, 346, 423
Placer 347
Sacramento 210, 423
San Bernardino 423

PAGE
San Joaquin 64, 140, 347, 424
Santa Barbara 64, 280, 348
Santa Clara 64
Sonoma 64, 281, 348, 424
Tulare 65, 348
Ventura 210, 424

(*c*) Woman's Auxiliary

PAGE
Component County Auxiliaries:
  Alameda 67, 351, 427
  Contra Costa 351
  Los Angeles 67, 141, 427
  Mendocino 351
  Sacramento 67, 352, 427
  San Diego 141, 352, 427
  Santa Barbara 428

PAGE
Letter from the State President, A.—Mrs. Andrew Mitchell Henderson 282
Meeting of State Board (Meeting of October 7, 1933) 351
President's Message.—Mrs. A. M. Henderson 66
Proposed Amendments to the Constitution of the Woman's Auxiliary to the California Medical Association 428
Retiring President's Address to the Auxiliary.—Mrs. F. E. Coulter 65

IX

DEPARTMENT OF PUBLIC RELATIONS OF THE CALIFORNIA MEDICAL ASSOCIATION

PAGE
Association Membership 351
Court Ruling on Fee Splitting 426
Current Trends in Medical Practice.—R. G. Leland 135
Federal Funds in Welfare Relief Work 208
Legislation Provides Reimbursement to Some Hospitals for Services to Indigents Injured in Automobile Accidents 426
Medical Service for Part-Pay Patients 350
Middle Class and Medical Costs, The.—Ray Lyman Wilbur 61

PAGE
Position of the State and County Medical Societies, The.—Alson R. Kilgore 61
Regulations of the Riverside County Medical Commission Adopted by the County Board of Supervisors Relative to the Medical Care of Indigent and Part-Pay patients 208
Report on Alameda Plan 350
What Is an X-Ray Examination.—E. H. Skinner 62
What Is Wrong with National Health Insurance.—Sir Henry Brackenbury 284

X

CANCER COMMISSION OF THE CALIFORNIA MEDICAL ASSOCIATION

PAGE
Report of Chest Tumors Committee 62

PAGE
Report of Committee on Skin and Mouth Tumors 136

XI

DECEASED MEMBERS—INDEX

PAGE
Alexander, Ralph Lee 425
Armistead, Howell V. 281
Braafladt, Louis Henry 425
Breitstein, Louis Isidor 65
Brier, Isahel Presbrey 211
Bryant, Ernest Albert 425
Carroll, John Joseph 211
Costar, William James, Jr. 425
De Lucis, Cav. Andrea 281
Dickson, George Gillespie 140
Dray, Frank Raymond 140
Edelman, David William 211, 281
Fraser, Morton William 349
Gallup, Howard Augustus 349, 425
Gaynor, John Joseph 425
Hulbert, George G. 65
Jennings, George Darwin 211
Johnson, Carl 425
Jorgenson, Hans Christian 281

PAGE
Lessard, Mark Davis 211
Lynch, Jerre George 349
Lyster, Theodore Charles 211, 212
Magan, Shaen Saurin 281, 349
Martineau, Allen Sherman 211
McElroy, Bernard F. 425
McSwain, Thomas Omar 349
Moots, Charles William 349
Oliver, Joseph A. 425
Pope, Frederick Samuel 425, 426
Roncovieri, Alfred 65
Russell, Tracy George 140
Sanford, Paul 349
Schurter, Maximilian Adolph 281
Shanks, Frederick Hastings 211
Sherwood, Oscar William 65
Talbot, William Thompson 425
Tower, Ora Isaiah 281
Wald, Olander E. 349
Woodbridge, Bradford 211

XII

NEVADA STATE MEDICAL ASSOCIATION—INDEX

PAGE
Component County Societies:
  Clark 67, 429
  Washoe 67, 283, 354, 429

PAGE
Thirtieth Annual Session of Nevada State Medical Association 352

XIII

BOOK REVIEWS—INDEX

PAGE
Ability to Pay for Medical Care, The—Louis S. Reed (July) Adv. p. 14
Asthma, Hay Fever, and Related Disorders—A Guide for Patients—Samuel M. Feinberg (July) Adv. p. 12
Clinical Aspects of the Electrocardiogram, Including the Arrhythmias—Harold E. B. Pardee (July) Adv. p. 11
Clinical Diagnosis—Physical and Differential—Neuton S. Stern (July) Adv. p. 12
Colon, Rectum, and Anus, The—Fred W. Rankin, J. Arnold Bargen, and Louis A. Buie (August) Adv. p. 11
Costs of Medical Care, The—I. S. Falk, C. Rufus Rorem and Martha D. Ring (July) Adv. p. 14
Diseases of the Heart Described for Practitioners and Students—Sir Thomas Lewis (July) Adv. p. 12
Diseases of Tradesmen—Bernardino Ramazzini (Sept.) Adv. p. 14
Duodenum, The.—Edward L. Kellogg (Dec.) Adv. p. 17
Endocrine Medicine—William Engelbach (Aug.) Adv. p. 12
Essentials of Prescription Writing—Carey Eggleston (Nov.) Adv. p. 14
Fungus Diseases—A Clinico-Mycological Text—Harry P. Jacobson (Oct.) Adv. p. 12
Gastric Anacidity—Its Relation to Disease—Arthur L. Bloomfield and W. Scott Polland (Sept.) Adv. p. 12
General History of Nursing, A—Lucy Ridgely Seymer (Sept.) Adv. p 11

PAGE
Gold-Headed Cane, The—William Macmichael (July) Adv. p. 18
Handbook of Bacteriology for Students and Practitioners of Medicine — Joseph W. Bigger (July) Adv. p. 14
History and Epidemiology of Syphilis, The.—William Allen Pusey (Dec.) Adv. p. 14
How to Budget Health Guilds for Doctors and Patients—Evans Clark (July) Adv. p. 11
Incidence of Illness, The—I. S. Falk, Margaret C. Klem, and Nathan Sinai (July) Adv. p. 14
Injuries of the Eye—Diagnosis and Treatment, Forensic Procedures, and Visual Economics—Harry Venderbilt Wurdemann (Sept.) Adv. p. 12
International Clinics, Vol. II, Forty-Third Series (Sept.) Adv. p. 12
Medical Secretary, The — Minnie Genevieve Morse (July) Adv. p. 12
Neuropathology, the Anatomical Foundation of Nervous Diseases—Walter Freeman (Oct.) Adv. p. 12
Obstetrics and Gynecology—Arthur Hale Curtis (Sept.) Adv. p. 11
Operative Story of Cleft Palate, The.—George Morris Dorrance (Dec.) Adv. p. 14

PAGE
Operative Surgery.—Warren Stone Bickham and Calvin Mason Smyth, Jr. (Dec.)........Adv. p. 12
Pelvis in Obstetrics, The—A Practical Manual of Pelvimetry and Cephalometry, Including Chapters on Roentgenological Measurement—Julius Jarcho (July)........Adv. p. 11
Physical Therapeutical Technic—Frank Butler Granger (Aug.)........Adv. p. 11
Practical Obstetrics for Students and Practitioners.—P. Brooke Bland, assisted by Thaddeus L. Montgomery (Dec.)........Adv. p. 12
Principles and Practice of Obstetrics, The—Joseph B. De Lee (July)........Adv. p. 17
Principles of Chemistry—Joseph H. Roe (July)....Adv. p. 14
PAGE
Roentgenographic Studies of the Urinary System—William E. Lower and Bernard H. Nichols (Nov.)........Adv. p. 12
Sputum, The—Its Examination and Clinical Significance—Randall Clifford (July)........Adv. p. 17
Surgical Anatomy—C. Latimer Callander (Nov.)..Adv. p. 14
Surgical Pathology—William Boyd (Oct.)........Adv. p. 14
Synopsis of Gynecology Based on the Textbook—Diseases of Women—Harry Sturgeon Crossen and Robert James Crossen (July)........Adv. p. 17
Ten Years of Obstetrics and Gynecology in Private Practice—John Lincoln Rothrock (Aug.)........Adv. p. 11
Wheat, Egg or Milk-Free Diets, with Recipes and Food Lists—Ray M. Balyeat, assisted bv Elmer M. Rusten and Ralph Bowen (Oct.)........Adv. p. 14

XIV

CALIFORNIA STATE BOARD OF MEDICAL EXAMINERS—INDEX

Abortions, Alleged: See
  Brison, George, D. C.
  Browning, Mrs. Mae
  Marmillion, Mathew J., M. D.
  Rew, Jessie
  Van Wagenen, Daniel B., M. D.
Aeberli, Anna, August, Adv. p. 19; p. 216.
Anslinger, H. J., August, Adv. p. 17.
Attorney-General's opinion re Health Officer, December, Adv. p. 18.
Barber, Schuyler A., M. D., October, Adv. p. 18.
Barnes, Estelle, July, Adv. p. 19.
Bartlett, Claude, July, Adv. p. 19.
Beauty Specialists: See
  Aeberli, Anna
  De Desley, Jean
  Eyelash Dyeing.
  Ferguson, Jean
  Griffith, Robert B., M. D.
  Saltzman, Zailik, M. D.
  Wallach, Isidor, M. D.
  White, Christmas E.
Board's Judgment Reversed: See Rinaldo, Eugene J.
Board's Judgment Sustained: See Bold, Francis J., M. D.
Bold, Francis J., August, Adv. p. 18.
Bonaventura, Filberto A., M. D., July, Adv. p. 21.
Briggs, Louise, December, Adv. p. 21.
Brison, George, D. C., November, Adv. p. 21.
Browning, Mrs. Mae, p. 72.
Bruguiere, Pedar S., M. D., p. 144.
Caplinger, Charles, July, Adv. p. 21.
Certificates:
  Restored
    Edwords, Clarence E., M. D.
    Smith, Clarke, M. D.
    Wrenn, Joseph T., M. D.
    Zachariah, Simon R., M. D.
  Revoked
    Friend, Robert S., M. D.
    Hadley, James A., M. D.
    Marmillion, Matthew J., M. D.
    Rohlfing, Rudolph F., M. D.
    Ruth, Roy F., M. D.
    Van Wagenen, Daniel B., M. D.
Chiropractic—Court to determine scope of, August, Adv. p. 18.
Chiropractic certificates to food handlers not acceptable, September, Adv. p. 18.
Chiropractor Violators:
  Brison, George H., D. C.
  Parchen, George, D. C.
Clinics—Legislation re, p. 72.
Cook, Edward R. (Bishop Cook), November, Adv. p. 21.
Court action to determine chiropractic scope, August, Adv. p. 18.
Court decisions. See Bold, Francis J.; Rinaldo, Eugene J.
Cowle, J. C., July, Adv. p. 22.
Curtis, William H., M. D., p. 144.
Davenport, Daniel. See Bartlett, Horace; Ippelthwaite, Horace.
Davis, Arthur L., M. D., pp. 72, 144.
del Castillo, Antonio, M. D., December, Adv. p. 18.
de Desley, Jean, July, Adv. p. 21. See Beauty Specialists.
de Vaughn, Oscar W., M. D., November, p. 21.
Dewees, George B., M. D., pp. 144, 360.
Diploma—Stolen, November, Adv. p. 18.
Edwords, Clarence, M. D., p. 144.
Examination Results, p. 288, 432.
Eyelash Dye—Damage from, p. 216.
Eyesight Swindlers, October, Adv. p. 18.
First Church of Psychic Science, July, Adv. p. 19. See Barnes, Estelle.
Ferguson, Jean (alias Jean de Desley), July, Adv. p. 21. See Beauty Specialists.
Foreign Medical Graduates (Resolution), p. 144.
Frary, Louis A., M. D., p. 360.
Frasier, George W., M. D., p. 144.
Fraudulent Credentials:
  See Woelfli, Frederick A., August, Adv. p. 19.
Friend, Robert S., M. D., p. 360.
Gardner, Henry L., M. D., p. 144.
Gray, Jeannette, July, Adv. p. 22.
Griffith, H. M., M. D., August, Adv. p. 19.
Griffith, Robert B., M. D., July, Adv. p. 21; p. 144.
Hadley, James A., p. 360.
Hall, James Bernard, September, Adv. p. 21; October, Adv. p. 18.
Harvey, George, p. 216.
Health Officer. See Opinions.
Hearings. July, p. 144; October, p. 360.
Hewitt, Arthur W., M. D., August, Adv. p. 18.
Hirotsu, Gunichi, September, Adv. p. 21.
Housman, Nathan S., M. D., p. 72.
Impostors: See
  Bartlett, Claude
  Davenport, Daniel
  Harvey, George
  Ippelthwaite, Horace
  LaRue, Henri, alias Wells, H. J.
  Miller, Frank J. C.
  Narcotic
  Parker, Wilbur Lester
  Ramsey, John W.
  Thompson, Willard
  Warnings
  Woelfli, Frederick A.
Ippelthwaite, Horace, July, Adv. p. 19.
  See Bartlett, Claude; Davenport, Daniel.
Legislation, July, 72.
Look, H. H., M. D., October, Adv. p. 24.
Lowry, Charles O., M. D., p. 144.
Marmillion, Matthew, J., M. D., August, Adv. p. 19; p. 360.
Medical Research Bureau, September, Adv. p. 21; October, Adv. p. 17.
Meetings of the Board, pp. 288, 360.
Melville, John W., December, Adv. p. 21.
Miller, Frank J. C., July, Adv. p. 21.
Morrison, Richard J., M. D., p. 144.
Morrow, Howard, M. D., December, Adv. p. 18.
Muhl, Anita, M. D., October, Adv. p. 21.
Narcotics, October, Adv. p. 18. See
  Bonaventura, Filberto, A., M. D.
  Curtiss, William H., M. D.
  Davis, Arthur L., M. D.
  Frary, Louis A., M. D.
  Frasier, George W., M. D.
  Friend, Robert S., M. D.
  Hadley, James A., M. D.
  Harvey, George
  Hewitt, Arthur W., M. D.
  Lowry, Charles O., M. D.
  Morrison, Richard J., M. D.
  Northrup, Frank A., M. D.
  Ramsay, James A., M. D.
  Ruth, Roy F., M. D.
  Tome, George B., D. O.
  Impostor, August, Adv. p. 18.
  Press article criticizing enforcement, August, Adv. p. 17.
Nelson, Arthur, M. D., October, Adv. p. 21.
Northrup, Frank A., M. D., December, Adv. p. 21.
Officers, Election of, p. 360.
Opinions: See
  Attorney-General.
  Chiropractor Certificates to Food Handlers.
Pacata, Rafael, November, Adv. p. 21.
Parchen, George H., D. C., December, Adv. p. 18.
Parker, Lester, October, Adv. p. 24.
Piburn, John Logan, M. D., December, Adv. p. 18.
Pons, Arthur, October, Adv. p. 18.
Pretzel, Paul, September. Adv. p. 21; October, Adv. p. 18.
Radio broadcast curtailed, September, Adv. p. 21.
Ramsay, James A., M. D., p. 144.
Ramsey, John W., July, Adv. p. 22.
Resolution re Foreign Medical Graduates, p. 144.
Rew, Jessie, July, Adv. p. 22.
Rinaldo, Eugene, July, Adv. p. 19; August, Adv. p. 18.
Roberts, R. S., September, Adv. p. 18.
Robinson, John, M. D., November, Adv. p. 21.
Rohlfing, Rudolph F., M. D., November, p. 360.
Rush Medical College:
  Fraudulent diploma. See Woelfli, F. A.
Ruth, Roy F., M. D., pp. 72, 360.
Saltzman, Zailik, M. D., p. 144.
Sims, George W., November, Adv. p. 21.
Smith, Clarke, M. D., p. 360.
Soferenko, Harry, M. D., October, Adv. p. 25.
Taylor, Charles E., M. D., p. 144.
Thompson, Willard, October, Adv. p. 24.
Tome, George B., D. O., October, Adv. p. 21.
Van Wagenen, D. B., M. D., August, Adv. p. 19; p. 360.
Wall, Joseph L., December, Adv. p. 18.
Wallach, Isidor A., M. D., p. 144; August, Adv. p. 19; pp. 216, 360.
Warning—Impostor, p. 360.
Wheeler, Clayton E., M. D., p. 360.
White, Christmas E., August, Adv. p. 19; p. 216.
Willard, Ralph S., October, Adv. p. 18.
Wilson, Virginia A., M. D., October, Adv. p. 21.
Woelfli, Frederick Albert, August, Adv. p. 19; December, Adv. p. 21.
Wrenn, Joseph T., M. D., p. 360.
Zachariah, Simon R., M. D., p. 360.
Zarate, R. S., September, Adv. p. 18.

NEXT ANNUAL SESSIONS
California Medical Association, Riverside, April 30–May 2, 1934
Nevada State Medical Association, Las Vegas, Nevada, September 29-30, 1933

Medical School Library
University of California
July 14

CALIFORNIA
AND
WESTERN MEDICINE

Owned and Published Monthly by the California Medical Association
FOUR FIFTY SUTTER, ROOM 2004, SAN FRANCISCO
ACCREDITED REPRESENTATIVE OF THE CALIFORNIA AND NEVADA MEDICAL ASSOCIATIONS

VOLUME XXXIX
NUMBER 1

JULY · 1933

50 CENTS A COPY
$5.00 A YEAR

CONTENTS AND SUBJECT INDEX

SPECIAL ARTICLES:

Care of the Indigent—Alameda County Plan. By George G. Reinle, Oakland.... 1
Discussion by R. G. Leland, Chicago, Illinois.
Central Clinic Service — San Diego County Plan. By Hall G. Holder, San Diego 6
Living Grafts of Endocrine Glands. Part II. By Harvey B. Stone, James C. Owings, and George O. Gey, Baltimore, Maryland 10
Prostatic Obstruction—Development of Its Surgical Treatment. Part II. By Hermon C. Bumpus, Jr., Rochester, Minnesota 13
Cardiovascular Disease in Diabetes Mellitus. Part II. By James W. Sherrill, La Jolla 17
The Physician's Interest in the Making of a Will. By Hartley F. Peart, Esq., San Francisco.... 20
Muscle Training in Industrial Injuries. By T. E. P. Gocher, San Francisco.... 21
Discussion by Harold M. F. Behneman, San Francisco; John Homer Woolsey, San Francisco.
Refraction. By T. W. Kelsey, Sacramento 25
Discussion by Dewey R. Powell, Stockton; M. N. Beigelman, Los Angeles; Joseph L. McCool, San Francisco.
Calcium Therapy in Urology. By Henry A. R. Kreutzmann, San Francisco.... 29
Discussion by Franklin Farman, Los Angeles; Miley B. Wesson, San Francisco; Albert M. Meads, Oakland.
Chronic Purulent Otitis Media. By Russell Fletcher, San Francisco.... 32
Discussion by J. D. Lewis, Santa Barbara; Frank A. Burton, San Diego; Robert C. Martin, San Francisco.
The Adenomatous Goiter. By W. P. Kroger, Los Angeles.... 35
Discussion by H. H. Searls, San Francisco; Clarence G. Toland, Los Angeles; William E. Costolow, Los Angeles.
Sterility. By Frederic M Loomis, Oakland 38
Discussion by Margaret Schulze, San Francisco; Louis I. Breitstein, San Francisco; Lyle G. McNeile, Los Angeles.
Toxemias of Pregnancy. By Louis I. Breitstein and Abraham Bernstein, San Francisco 42
Discussion by E. M. Lazard, Los Angeles; Margaret Schulze, San Francisco; John A. Sperry, San Francisco.

THE LURE OF MEDICAL HISTORY:

Johann Sigismund Elsholtz. Part II. By Ethel Gladstone, San Francisco.... 45

CLINICAL NOTES AND CASE REPORTS:

Duodenal Stasis. By Paul H. Moore, Los Angeles 48
Carcinoid Appendix. By Walter J. Sullivan, Los Angeles.... 49
Foreign Body in the Ischiorectal Space. By David N. Yaker, Los Angeles.... 50

BEDSIDE MEDICINE:

Migraine 52
Discussion by Edward W. Twitchell, San Francisco; LeRoy Briggs, San Francisco; Gordon E. Hein, San Francisco.

EDITORIALS:

The Alameda and San Diego Medical Service Plans 56
The Use of the Injunction in Medical Practice 56
Making a Will.... 57
Decreased Budget of State Board of Health 58

EDITORIAL COMMENT:

Mediastinal Pleurisy. By Henry Snure, Los Angeles.... 58
Histological Specificity. By W. H. Manwaring, Palo Alto.... 59
Common Surgical Errors. By Harold E. Crowe, Los Angeles.... 60

STATE MEDICAL ASSOCIATIONS:

C. M. A. DEPARTMENT OF PUBLIC RELATIONS 61
CANCER COMMISSION 62
CALIFORNIA MEDICAL ASSOCIATION.... 64
The Woman's Auxiliary to the California Medical Association 65
NEVADA STATE MEDICAL ASSOCIATION 67

MISCELLANY:

News 69
Twenty-Five Years Ago.... 72
Board of Medical Examiners of the State of California 72
California Medical Association Directories.... Adv. pages 2, 4, 6
Book Reviews .... Adv. page 11

ADVERTISEMENTS—INDEX:

.... Adv. page 8

"Entered as second-class matter at the post office at San Francisco, California, under the Act of March 3, 1879." Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized August 10, 1918.

GREENS' EYE HOSPITAL

. . . for Consultation, Diagnosis, and Treatment of the Eye

THE HOSPITAL

As an aid in the study and diagnosis of eye conditions, Greens' Eye Hospital maintains a fully equipped

Ear, Nose, and Throat Department

This department is conducted on the same basis as the eye clinic and is open to all patients for the treatment of Ear, Nose, and Throat.

BUSH AT
OCTAVIA
STREET

San Francisco
Telephone
WEst 4300

●

EMERGENCY EYE SERVICE

A twenty-four hour emergency eye service including Sundays and holidays is now available with an Ophthalmologist on duty.

Staff

OPHTHALMOLOGY
Aaron S. Green, M. D.
Louis D. Green, M. D.
Martin I. Green, M. D.
Einar V. Blak, M. D.
Vincent V. Suglian, M. D.

OTOLARYNGOLOGY
Lafayette P. Monson, M. D.

Address Communications to Superintendent

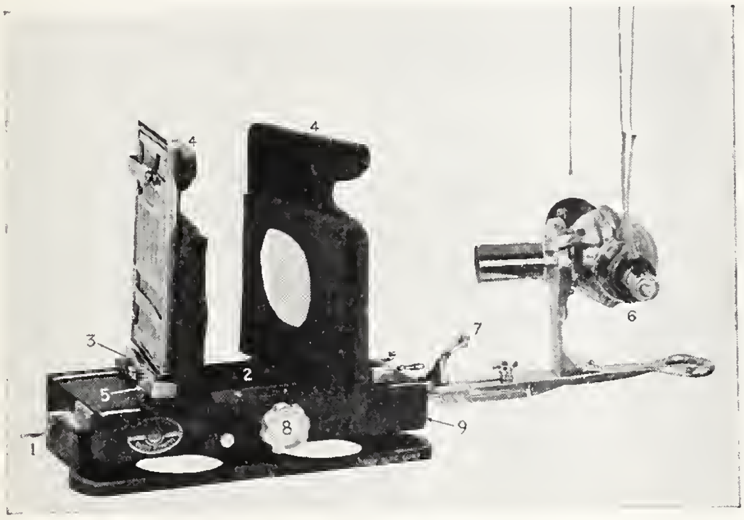
BUSH

Patronize Your Home Firm

Because We Are Progressive

Bullitt's Mastoid Apparatus

For Stereoscopic Roentgenography of the Mastoids



THE technical difficulty of stereoscopic Roentgenography of the Mastoids is well recognized and has largely limited the application of this highly useful method to the examination of the mastoid.

These technical difficulties have been entirely eliminated by Dr. Bullitt's Mastoid Apparatus, here illustrated. With this device the Stereoscopic examination of the Mastoids becomes a simple and rapid procedure. Two 8 x 10 films loaded in Cassettes are used, the two mastoids appearing side by side in symmetrical pattern, for comparative examination.

In the use of apparatus the patient lies on his back, the weight of the head being borne on the occiput and not on the possibly painful and tender mastoid. This position has obvious advantages, the mastoid is in full view and can be accurately placed under the eye to secure the best results. Films of perfect symmetry can be produced and reproduced, by the accurate technician. The upright Cassette Holders serve likewise as the means of fixing the head, being opened and closed by a rack and pinion arrangement. Investigate this apparatus at once; it will save you time and money.

TO EMPLOY the adapter, it is only necessary to remove the tube holder and place adapter in position as shown. The adapter is so arranged that with slight adjustment, it may be used on either side. Only a few seconds are required to make the change from the mastoid to the Sella Turcica position.

With this device, radiographs, either single or stereoscopic, may be duplicated at any future date due to exact positioning of the patient in the apparatus.

Sella Turcica Adapter

Manufactured by

BUSH ELECTRIC CORPORATION

334 Sutter Street
SAN FRANCISCO, CALIF.
EXbrook 5090

2016 Wilshire Boulevard
LOS ANGELES, CALIF.
EXposition 1189

BUSH

Officers of the California Medical Association

General Officers

President—George G. Reinle, 204 Dalziel Building, 532 Fifteenth Street, Oakland.
President-Elect—Clarence G. Toland, 902 Wilshire Medical Building, 1930 Wilshire Boulevard, Los Angeles.
Speaker of House of Delegates—Edward M. Pallette, 502 Wilshire Medical Building, 1930 Wilshire Boulevard, Los Angeles.
Vice-Speaker of House of Delegates—John H. Graves, 977 Valencia Street, San Francisco.
Chairman of Council—T. Henshaw Kelly, 830 Medico-Dental Building, 490 Post Street, San Francisco.
Chairman of Executive Committee—Karl L. Schaupp, 530 Medico-Dental Building, 490 Post Street, San Francisco.
Chairman of the Committee on Public Relations—Charles A. Dukes, 601 Wakefield Building, 426 Seventeenth Street, Oakland.
Secretary-Treasurer—Emma W. Pope, Four Fifty Sutter Street, Room 2004, San Francisco.
Editor—George H. Kress, 945 Roosevelt Building, 727 West Seventh Street, Los Angeles.
General Counsel—Hartley F. Peart, Room 1800, 111 Sutter Street, San Francisco.
Associate General Counsel—Hubert T. Morrow, Van Nuys Building, 210 West Seventh Street, Los Angeles

Councilors

District Councilors

First District—Imperial, Orange, Riverside, and San Diego Counties, W. W. Roblee (1935), 202 Mission Inn Rotonda, Riverside.

Second District—Los Angeles County, Carl R. Howson (1936), 711 Merritt Building, 307 West Eighth Street, Los Angeles.

Third District—Kern, San Bernardino, San Luis Obispo, Santa Barbara and Ventura Counties, Henry J. Ullmann (1934), 1520 Chapala Street, Santa Barbara.

Fourth District—Calaveras, Fresno, Inyo, Kings, Madera, Mariposa, Merced, Mono, San Joaquin, Stanislaus, Tulare and Tuolumne Counties, Fred R. DeLappe (1935), 218 Beaty Building, 1024 J Street, Modesto.

Fifth District—Monterey, San Benito, San Mateo, Santa Clara and Santa Cruz Counties, Alfred L. Phillips (1936), Farmers and Merchants Bank Building, Santa Cruz.

Sixth District—San Francisco County, Karl L. Schaupp (1934), 530 Medico-Dental Building, 490 Post Street, San Francisco.

Seventh District—Alameda and Contra Costa Counties, Oliver D. Hamlin (1935), Federal Realty Building, Oakland.

Eighth District—Alpine, Amador, Butte, Colusa, El Dorado, Glenn, Lassen, Modoc, Nevada, Placer, Plumas, Sacramento, Shasta, Sierra, Sutter, Tehama, Yolo, and Yuba Counties, C. E. Schoff (1936), 322 Medico-Dental Building, 1127 Eleventh Street, Sacramento.

Ninth District—Del Norte, Humboldt, Lake, Marin, Mendocino, Napa, Siskiyou, Solano, Sonoma and Trinity Counties, Henry S. Rogers (1934), Petaluma.

Councilors-at-Large

George G. Hunter (1935), 910 Pacific Mutual Building, 523 West Sixth Street, Los Angeles.
C. O. Tanner (1936), 3255 Fourth Street, San Diego.
William H. Kiger (1934), 911 Wilshire Medical Building, 1930 Wilshire Boulevard, Los Angeles.
Morton R. Gibbons (1935), Union Square Building, 350 Post Street, San Francisco.
T. Henshaw Kelly (1936), 830 Medico-Dental Building, 490 Post Street, San Francisco.
Junius B. Harris (1934), Medico-Dental Building, 1127 Eleventh Street, Sacramento.

Standing Committees

Executive Committee

The President, the President-elect, the Speaker of the House of Delegates, the Chairman of the Council, the Chairman of the Auditing Committee, the Chairman of the Committee on Public Relations, the Secretary-Treasurer and the Editor. (Secretary, Emma W. Pope.)

Auditing Committee

O. D. Hamlin	Oakland	1933
Morton R. Gibbons	San Francisco	1933
Karl L. Schaupp (Chairman)	San Francisco	1933

Committee on Associated Societies and Technical Groups

R. Manning Clarke (Chairman)	Los Angeles	1934
Clifford Sweet	Oakland	1935
William H. Geistweit	San Diego	1936

Committee on Extension Lectures

Robert T. Legge (Chairman)	Berkeley	1934
James F. Churchill	San Diego	1935
J. Homer Woolsey	San Francisco	1936

Secretary ex officio

Committee on Health and Public Instruction

Langley Porter	San Francisco	1934
Fred B. Clarke (Chairman)	Long Beach	1935
W. R. P. Clark	San Francisco	1936

Committee on History and Obituaries

George D. Lyman	San Francisco	1934
Charles D. Ball (Chairman)	Santa Ana	1935
J. Marion Read	San Francisco	1936

Secretary ex officio
Editor ex officio

Committee on Hospitals, Dispensaries and Clinics

Karl L. Schaupp	San Francisco	1934
John C. Ruddock	Los Angeles	1935
Daniel Crosby (Chairman)	Oakland	1936

Committee on Industrial Practice

Harry E. Zaiser	Orange	1934
Morton R. Gibbons (Chairman)	San Francisco	1935
Mott H. Arnold	San Diego	1936

Committee on Medical Defense

Henry Snure, Sr. (Chairman)	Los Angeles	1934
George G. Reinle	Oakland	1935
Fred R. De Lappe	Modesto	1936

Committee on Medical Economics

Willard Stone	Pasadena	1934
John H. Graves (Chairman)	San Francisco	1935
William R. Molony, Sr.	Los Angeles	1936

Committee on Medical Education and Medical Institutions

H. A. L. Ryfkogel	San Francisco	1934
George Dock (Chairman)	Pasadena	1935
George G. Hunter	Los Angeles	1936

Committee on Membership and Organization

LeRoy Brooks	San Francisco	1934
Harry H. Wilson (Chairman)	Los Angeles	1935
Dewey R. Powell	Stockton	1936

Secretary ex officio

Committee on Publications

Percy T. Magan (Chairman)	Los Angeles	1934
Ruggles A. Cushman	Talmage	1935
Frederick F. Gundrum	Sacramento	1936

Secretary ex officio
Editor ex officio

Committee on Public Policy and Legislation

E. T. Remmen	Glendale	1934
Junius B. Harris (Chairman)	Sacramento	1935
Fred R. De Lappe	Modesto	1936

President ex officio
President-elect ex officio

Committee on Scientific Work

Lemuel P. Adams	Oakland	1934
J. Homer Woolsey	San Francisco	1935
F. M. Pottenger	Monrovia	1936

H. O. Koefod, Secretary of Section on General Medicine, ex officio
Edwin M. Taylor, Secretary of Section on General Surgery, ex officio
Emma W. Pope (Chairman), ex officio

Committee on Public Relations

The Committee on Public Relations consists of the chairmen of the following standing committees and of certain general officers of the Association, all serving ex officio. The chairman of the committee is Dr. Charles A. Dukes, the secretary is Dr. Emma W. Pope. The director of the Department of Public Relations is Dr. Walter M. Dickie.

Fred B. Clarke	Chair., Com. on Health and Public Instruction
Daniel Crosby	Chair., Com. on Hospitals, Dispensaries, Clinics
Morton R. Gibbons	Chair., Com. on Industrial Practice
Harry H. Wilson	Chair., Com. on Membership and Organization
John H. Graves	Chair., Com. on Medical Economics
Junius B. Harris	Chair., Com. on Public Policy and Legislation
Charles A. Dukes	Chair., Cancer Commission
George G. Reinle	President of the California Medical Association
Clarence G. Toland	President-elect
Emma W. Pope	Secretary-Treasurer

Communications for the Public Relations Department should be addressed to the Director, Dr. Walter M. Dickie, Room 2039, 450 Sutter Street, San Francisco.

Cancer Commission

Charles A. Dukes (Chairman)	Oakland	1934
Lyell C. Kinney (Vice-Chairman)	San Diego	1934
Alson R. Kilgore (Secretary)	San Francisco	1934
*William Ophüls	San Francisco	1935
Orville Meland (Sec'y for Southern Section)	Los Angeles	1935
A. Herman Zeiler	Los Angeles	1935
Harold Brunn	San Francisco	1936
Henry J. Ullmann	Santa Barbara	1936
Clarence G. Toland	Los Angeles	1936

Communications for the Cancer Commission should be addressed to the Secretary, A. R. Kilgore, M. D., Room 2039, 450 Sutter Street, San Francisco.

---

* Deceased.

(Roster lists continued on advertising page 4)

SPECIAL MOTORCYCLE SERVICE
HOURS: Week Days, 8 A.M. to 9 P.M. . . . . Sundays, 9-1, 6-8
Special attention given all telephone prescriptions. Four stores will furnish special motorcycle service delivery to any part of the city at any hour of the day or evening.

Broemmel's Prescription Pharmacies
ESTABLISHED 1868
SERUMS ✓ VACCINES ✓ ANTITOXINS

Third Floor Medico-Dental Bldg.
Post and Mason Streets
Telephones: GArfield 0265-0266

California and Steiner Streets
Telephones: WEst 0558-0559
Fourth Floor, 450 Sutter
Telephones: GArfield 4486-4487

Second Floor, Fitzhugh Bldg.
Post and Powell Streets
Telephones: GArfield 4417-4418-4419-4420-4421-4422

LAS ENCINAS - - - PASADENA, CALIF.
A SANITARIUM FOR THE TREATMENT OF GENERAL AND NERVOUS DISEASES
Board of Directors: GEORGE DOCK, M. D., *President;* W. JARVIS BARLOW, M. D.; STEPHEN SMITH, M. D.; CHARLES W. THOMPSON, M. D.; GEORGE HUNTER, M. D.
Address: STEPHEN SMITH, M.D., F.A.C.P., or CHARLES W. THOMPSON, M.D., F.A.C.P., Medical Directors
LAS ENCINAS, PASADENA, CALIFORNIA

Pablum—Mead's Precooked Cereal.—Mead Johnson & Company are now marketing Mead's cereal in dried precooked form, ready to serve, under the name of Pablum. This product combines all of the outstanding mineral and vitamin advantages of Mead's cereal with great ease of preparation.

All the mother has to do to prepare Pablum is to measure the prescribed amount directly into the baby's cereal bowl and add previously boiled milk, water, or milk and water, stirring with a fork. It may be served hot or cold, and for older children and adults cream and sugar may be added as desired.

Mothers will coöperate with physicians better in the feeding of their babies because Pablum is so easy to prepare. It gives them the extra hour's rest in the morning and saves bending their backs over a hot kitchen stove in summer. For samples apply to Mead Johnson & Company, Evansville, Indiana.

Cocomalt in Milk.—An alarming result of the economic depression through which we are passing is the tremendous increase in malnutrition among school children. A recent survey of 130,000 school children in sixteen states showed that 21 per cent were underweight by 10 per cent or more.

One way in which school and medical authorities are meeting this grave problem—combating this ever-increasing menace—is by serving Cocomalt in milk to the youngsters at lunch time. Every glass is equal in food-energy nourishment to almost two glasses of milk alone; and as a result the children very quickly show signs of mental and physical improvement. Wherever possible, parents have been asked to coöperate by serving Cocomalt in milk at home. Children love this delicious chocolate flavor food-drink and drink far more of it than they would of milk alone. Very gratifying gains have been reported.

Cocomalt contains a rich supply of sunshine vitamin D, and is accepted by the American Medical Association Committee on Foods.

Dewar & Hare Electric Co.
Manufacturers and Distributors
X-Ray and Physiotherapy Equipment
and
Aurora X-Ray Corporation Products
X-Ray Apparatus ✓ Quartz Ultra Violet Lamps
Infra Red Lamps ✓ Accessories
"Thermotax" Diathermy ✓ "Electrotax" Sine Wave
386 SEVENTEENTH STREET, *near Franklin St.*
Telephone GLencourt 9273 Oakland, California

A San Francisco Organization
Shumate Drug Company
DISPENSING CHEMISTS
Catering to the Medical Profession
Since 1890

Officers of Scientific Sections of California Medical Association

Anesthesiology

Chairman, John Miller Wilson, 605 Professional Building, Pasadena.
Secretary, Ethel Righetti, 319 Walnut Street, San Francisco.

Dermatology and Syphilology

Chairman, Louis F. X. Wilhelm, 410 California Medical Building, 1401 South Hope Street, Los Angeles.
Vice-Chairman, C. E. Schoff, 322 Medico-Dental Building, 1127 Eleventh Street, Sacramento.
Secretary, Philip K. Allen, 314 Medico-Dental Building, 233 A Street, San Diego.

Eye, Ear, Nose and Throat

Chairman, J. Roy Jones, 2138 Third Avenue, Sacramento.
Vice-Chairman, Harold A. Fletcher, 1440 Medico-Dental Building, 490 Post Street, San Francisco.
Secretary, Samuel A. Durr, 1304 Medico-Dental Building, 233 A Street, San Diego.

General Medicine

Chairman, Fred H. Kruse, 916 Fitzhugh Building, 384 Post Street, San Francisco.
Secretary, Hilmar O. Koefod, 1421 State Street, Santa Barbara.

General Surgery

Chairman, Joseph K. Swindt, 546 Investment Building, Pomona.
Secretary, Edwin M. Taylor, 230 Grand Avenue, Oakland.
Assistant Secretary, William P. Kroger, 902 Wilshire Medical Building, 1930 Wilshire Boulevard, Los Angeles.

Industrial Medicine and Surgery

Chairman, John J. Loutzenheiser, Union Square Building, 350 Post Street, San Francisco.
Secretary, J. Minton Meherin, 507 Union Square Building, 350 Post Street, San Francisco.

Neuropsychiatry

Chairman, Clifford W. Mack, Livermore Sanitarium. Livermore.
Vice-Chairman, Helen Hopkins, 925 Pacific Mutual Building, 523 W. Sixth Street, Los Angeles.
Secretary, H. Douglas Eaton, 811 Medical Office Building, 1136 West Sixth Street, Los Angeles.

Obstetrics and Gynecology

Chairman, Alice F. Maxwell, University of California Hospital, Fourth and Parnassus Avenues, San Francisco.
Vice-Chairman. Emil F. Krahulik. 1021 Taft Building, 1680 N. Vine Street, Hollywood.
Secretary, H. A. Stephenson, 521 Medico-Dental Building, 490 Post Street, San Francisco.

Pathology and Bacteriology

Chairman, George D. Maner, Wilshire Medical Building, 1930 Wilshire Boulevard, Los Angeles.
Secretary, Emil Bogen, Olive View Sanitarium, Olive View.
Assistant Secretary, Zera E. Bolin, 450 Sutter Street, San Francisco.

Pediatrics

Chairman, Francis S. Smyth, University of California Hospital, Fourth and Parnassus Avenues, San Francisco.
Secretary, Henry E. Stafford, 242 Moss Avenue, Oakland.
Assistant Secretary, Sam J. McClendon, 2001 Fourth Street, San Diego.

Radiology

Chairman, Robert S. Stone, University of California Hospital, Fourth and Parnassus Avenues, San Francisco.
Secretary, Kenneth S. Davis, St. Vincent's Hospital, 2131 Ocean View Boulevard, Los Angeles.

Urology

Chairman, Lewis Michelson, 434 Medico-Dental Building, 490 Post Street, San Francisco.
Secretary, George F. Schenck, 308 Wilshire Medical Building, 1930 Wilshire Boulevard, Los Angeles.

Officers of County Medical Associations

Alameda County Medical Association

2404 Broadway, Oakland

President, Dexter N. Richards, 400 29th St., Oakland.
Secretary, Gertrude Moore, 2404 Broadway, Oakland.

Butte County Medical Society

President, Dan H. Moulton, Box 520, Chico.
Secretary, J. O. Chiapella, Chiapella Building, Chico.

Contra Costa County Medical Society

President, L. H. Fraser, American Trust Bldg., Richmond.
Secretary, Clara H. Spalding, 331 Eighth Street, Richmond.

Fresno County Medical Society

President, Elmer J. Schmidt, 612 T. W. Patterson Building, Fresno.
Secretary, Neil J. Dau, 1111 Fulton St., Fresno.

Humboldt County Medical Society

President, Lane Falk, 507 F Street, Eureka.
Secretary, L. A. Wing, Eureka.

Imperial County Medical Society

President, John L. Parker, Brawley.
Secretary, George C. Holleran, Brawley.

Kern County Medical Society

President, Perryman F. Page, Box 426, Taft.
Secretary, Seymour Strongin, San Joaquin Hospital, Bakersfield.

Kings County Medical Society

President,
Secretary, Benjamin H. Pratt, First National Bank Building, Lemoore.

Lassen-Plumas County Medical Society

President, Bert J. Lasswell, Quincy.
Secretary, C. I. Burnett, Knoch Building, Susanville.

Los Angeles County Medical Association

1925 Wilshire Boulevard

President, Charles T. Sturgeon, 1930 Wilshire Boulevard, Los Angeles.
Secretary, Harry H. Wilson, 1925 Wilshire Boulevard, Los Angeles.

Marin County Medical Society

President, John H. Kuser, Cheda Building, San Rafael.
Secretary, Carl W. Clark, Albert Building, San Rafael.

Mendocino County Medical Society

President, R. A. Babcock, Willits.
Secretary, Paul J. Bowman. Fort Bragg.

Merced County Medical Society

President, B. E. McDowell, Bank of Italy Building, Merced.
Secretary, Fred O. Lien, Shaffer Building, Merced.

Monterey County Medical Society

President, R. M. Fortier, 2 McDougall Building, Salinas.
Secretary, John A. Merrill, 308 Spazier Building, Monterey.

Napa County Medical Society

President, C. A. Johnson, Gordon Building, Napa.
Secretary, M. M. Booth, 1379 Main Street, St. Helena.

Orange County Medical Society

President, William S. Wallace, 207 W. Chapman Street, Orange.
Secretary, Waldo S. Wehrly, 620 N. Main Street, Santa Ana.

Placer County Medical Society

President, L. B. Barnes, Newcastle.
Secretary, R. A. Peers. Colfax.

Riverside County Medical Society

President, Hervey S. Farris, 3616 Main Street, Riverside.
Secretary, T. A. Card, Glenwood Block, Riverside.

Sacramento Society for Medical Improvement

President, George A. Briggs, 409 Farmers and Mechanics Bank Bldg., Sacramento.
Secretary, Frank W. Lee, 510 Physicians Building, 1027 Tenth Street, Sacramento.

San Benito County Medical Society

President, L. C. Hull, Hollister.
Secretary, L. E. Smith. Hollister.

San Bernardino County Medical Society

President, Fred B. Moor, Loma Linda.
Secretary, E. J. Eytinge, 47 East Vine Street, Redlands.

San Diego County Medical Society

Fourteenth Floor, Medico-Dental Building.
233 A Street, San Diego

President, Clair L. Stealy, 2001 Fourth St., San Diego.
Secretary, William H. Geistweit, Jr., 810 Medico-Dental Building, 233 A Street, San Diego.

San Francisco County Medical Society

2180 Washington Street, San Francisco

President, Karl L. Schaupp, 530 Medico-Dental Bldg., 490 Post St., San Francisco.
Secretary, Mary Jones-Mentzer, 2180 Washington St., San Francisco.

San Joaquin County Medical Society

President, J. F. Doughty, 231 W. 11th St., Tracy.
Secretary, C. A. Broaddus, 907 Medico-Dental Building, 242 North Sutter Street, Stockton.

San Luis Obispo County Medical Society

President, W. D. Butler, 1114 Chorro Street, San Luis Obispo.
Secretary, Allen F. Gillihan, San Luis Obispo.

San Mateo County Medical Society

President, Benjamin H. Page, 231 Second Avenue, San Mateo.
Secretary, H. H. Ray, 23 Second Avenue, San Mateo.

(Roster lists continued on advertising page 6)

Santa Barbara County Medical Society

President, M. J. Geyman, 1520 Chapala Street, Santa Barbara.
Secretary, William H. Eaton, Health Department, Santa Barbara.

Santa Clara County Medical Society

President, George L. Barry, 700 Medico-Dental Building, San Jose.
Secretary, E O. G. Schmitt, 608 Medico-Dental Building, San Jose.

Santa Cruz County Medical Society

President, O. C. Marshall, New Register Building, Watsonville.
Secretary, Samuel B. Randall, Farmers and Merchants Natl. Bank Bldg., Santa Cruz.

Shasta County Medical Society

President, Earnest Dozier, Masonic Building, Redding.
Secretary, F. H. Olberg. Craddock Building, Redding.

Siskiyou County Medical Society

President, W. E. Hart, Yreka.
Secretary, Joseph Langer, Hilt.

Solano County Medical Society

President, Philip B. Fry, Benicia.
Secretary, John W. Green, 427 Sacramento Street, Vallejo.

Sonoma County Medical Society

President, Mark L. Lewis, 41 Main Street, Petaluma.
Secretary, W. C. Shipley, 206 Rosenberg Building, Santa Rosa.

Stanislaus County Medical Society

President, Donald L. Robertson, 1003 12th Street, Modesto.
Secretary, J. A. Porter, 209 Beaty Bldg., 1024 J St., Modesto.

Tehama County Medical Society

President, F. L. Doane, Red Bluff.
Secretary, F. J. Bailey, Red Bluff.

Tulare County Medical Society

President, Frank Kohn, County Hospital, Tulare.
Secretary, Karl F. Weiss, Security First National Bank Building, Visalia.

Ventura County Medical Society

President, F. Royal Hendricks, 620 E. Main St., Ventura.
Secretary, Wm. Felberbaum, 134 N. 10th St., Santa Paula.

Yolo-Colusa-Glenn County Medical Society

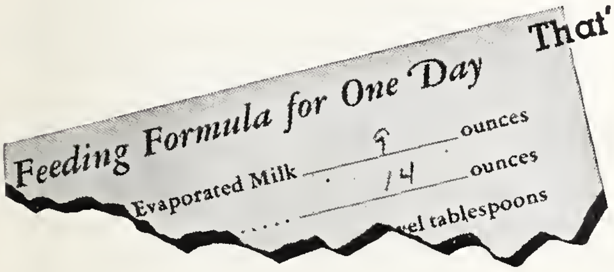
President, Oscar C. Railsback, Woodland Clinic, Woodland.
Secretary, G. W. Desrosier, Colusa.

Yuba-Sutter County Medical Society

President, T. E. Larner, I. O. O. F. Building, Marysville.
Secretary, Fred W. Didier, Wheatland.

YOUR FORMULA with bridge table variations

"Be sure to use——'s. That's what I use."



Feeding Formula for One Day
Evaporated Milk ___9___ ounces
..... ___14___ ounces
...vel tablespoons

"My mother always says ——'s is best for a baby."

"Try——Brand. It's such a pretty name for a milk, isn't it?"

MUCH free advice on infant feeding can be obtained across the bridge table. But should a mother rely upon this kind of advice to guide her in her choice of Evaporated Milk for baby?

When you prescribe Evaporated Milk for infant feeding, you have in mind a milk with certain qualities . . . wholesomeness, freshness and purity. But the bridge table "authorities" may not know which brand of milk measures up to your high standards. That is why the mother needs *your* guidance in the selection of brand and quality.

The Borden Company produces Evaporated Milks in which the physician will find the quality he demands for infant feeding. For seventy-five years Borden's has maintained the highest standards of milk selection and the most rigid requirements throughout the process of manufacture. These standards and requirements prevail today in the production of all the Borden brands . . . Borden's Evaporated Milk . . . Pearl . . . Maricopa . . . Oregon . . . St. Charles . . . Silver Cow. All are accepted by the American Medical Association.

Write for free sample of Borden's Evaporated Milk and scientific literature. Address The Borden Company, Dept. 323, 350 Madison Ave., New York, N. Y.

The Borden Company was the first to submit evaporated milk for acceptance by the Committee on Foods of the American Medical Association. Borden's was the first evaporated milk to receive the seal of acceptance of this Committee.

Borden's

EVAPORATED MILK

Woman's Auxiliary to the California Medical Association

State Auxiliary Officers

President, Mrs. Andrew Mitchell Henderson, 1600 M Street, Sacramento.
President-Elect, Mrs. Philip Schuyler Doane, 855 Oak Knoll Circle, Pasadena.
First Vice-President, Mrs. Paul A. Quaintance, 809 South Orange Drive, Los Angeles.
Second Vice-President, Mrs. Thomas Clark, 40 Ross Circle, Oakland.
Recording Secretary, Mrs. Ruggles A. Cushman, Talmage.
Corresponding Secretary, Mrs. Charles E. Von Geldern, 1325 Fortieth Street, Sacramento.
Treasurer, Mrs. F. N. Scatena, 1400 Forty-first Street, Sacramento.

Officers of County Auxiliaries

Alameda County — President, Mrs. Charles Dukes, 211 The Uplands, Oakland.
Contra Costa County—President, Mrs. U. S. Abbott, 5490 Barrett Avenue, Richmond.
Los Angeles County — President, Mrs. A. Bennett Cooke, Pasadena.
Mendocino County—Mrs. R. A. Cushman, Talmage.
Napa County—President, Mrs. W. L. Blodget, Calistoga.
Orange County—Mrs. C. S. O'Toole, Anaheim.
Riverside County — Mrs. A. W. Walker, Riverside.
Sacramento County—President, Mrs. Frederick N. Scatena, Sacramento.
San Bernardino County—President, Mrs. C. G. Hilliard, Redlands.
San Diego County—President, Mrs. Charles E. Howard, San Diego.
San Joaquin County—President, Mrs. P. B. Gallegos, Stockton.
Santa Barbara County—President, Mrs. R.T. Atsatt, Santa Barbara.
San Luis Obispo County—Mrs. Deon A. Crew, 846 Higuera Street, San Luis Obispo.
Sonoma County—President, Mrs. Henry S. Rogers. Petaluma.

Delegates and Alternates to the American Medical Association

DELEGATES		ALTERNATES
C. A. Dukes, Oakland	(1933-1934)	Edward N. Ewer, Oakland
Carl R. Howson, Los Angeles	(1933-1934)	Edward M. Pallette, Los Angeles
Junius B. Harris, Sacramento	(1933-1934)	John Hunt Shepard, San Jose
William R. Molony, Sr., Los Angeles	(1933-1934)	John C. Ruddock, Los Angeles
Elbridge Best, San Francisco	(1934-1935)	Robert S. Stone, San Francisco
Lyell C. Kinney, San Diego	(1934-1935)	Harry H. Wilson, Los Angeles
Fred B. Clarke, Long Beach	(1934-1935)	A. J. Scott, Los Angeles

Miscellaneous California Medical Organizations

California State Department of Public Health

San Francisco, 337 State Building
Los Angeles, 821 Associated Realty Building
Sacramento, Box 1159
President, John H. Graves, San Francisco.
Director, Giles S. Porter, Los Angeles.

Board of Medical Examiners of the State of California

San Francisco, Rm. 512, 450 McAllister St.
Los Angeles, 812 Associated Realty Building
510 West Sixth Street
Sacramento, 420 State Office Building
President, P. T. Phillips, Santa Cruz.
Secretary, C .B. Pinkham, Room 512, 450 McAllister Street, San Francisco.

Southern California Medical Association

President, Bon O. Adams, Riverside.
Secretary, Robert W. Langley, 1002 Wilshire Medical Building, 1930 Wilshire Boulevard, Los Angeles.

California Northern District Medical Society

President, D. Schuyler Pulford, California State Life Building, Sacramento.
Secretary, Edward S. Babcock, 820 Medico-Dental Building, 1127 Eleventh Street, Sacramento.

Better Health Foundation

President, Reginald Knight Smith, 490 Post Street, San Francisco.
Chairman, Executive Committee, Walter B. Coffey, 65 Market Street, San Francisco.
Treasurer, John Gallwey, 1195 Bush Street, San Francisco.
Secretary, Celestine J. Sullivan, 490 Post Street, San Francisco.

Nevada State Medical Association

O. HOVENDEN, McGill	President
D. A. SMITH, Mina	President-elect
J. N. VAN METER, Las Vegas	First Vice-President
FLEET H. HARRISON, Minden	Second Vice-President
HORACE J. BROWN, Reno	Secretary-Treasurer
HORACE J. BROWN, Reno	Delegate
E. E. HAMER, Carson City	Alternate

Hospitals and Sanatoriums

The Institutions here listed have announcements in this issue of CALIFORNIA AND WESTERN MEDICINE. For Index, see advertising page 8.

ALEXANDER SANITARIUM
Nervous and Mild Mental Diseases
Belmont, California

CANYON SANATORIUM
For the Treatment of Tuberculosis
Redwood City, California

COLFAX SCHOOL FOR THE TUBERCULOUS
For the Treatment of Tuberculosis
Colfax, California

COMPTON SANATORIUM AND LAS CAMPANAS HOSPITAL, COMPTON
Neuropsychiatric and General

DANTE SANATORIUM
Limited General Hospital
Van Ness and Broadway, San Francisco

FRANKLIN HOSPITAL
Limited General Hospital
Fourteenth and Noe Streets, San Francisco

FRENCH HOSPITAL
General Hospital
Geary at Fifth Avenue, San Francisco

GREENS' EYE HOSPITAL
Consultation, Diagnosis and Treatment of Diseases of the Eye
Bush and Octavia Streets, San Francisco

THE GREER HOME, Inc.
Convalescent Home
6000 Fulton Street, San Francisco

LAS ENCINAS SANITARIUM
Nervous and General Diseases
Las Encinas, Pasadena, California

LIVERMORE SANITARIUM
Nervous and General Diseases
Livermore, California

POTTENGER SANATORIUM AND CLINIC
For the Treatment of Tuberculosis
Monrovia, California

SAINT FRANCIS HOSPITAL
Limited General Hospital
Bush and Hyde Streets, San Francisco

ST. LUKE'S HOSPITAL
Limited General Hospital
27th and Valencia Streets, San Francisco

ST. MARY'S HOSPITAL
General Hospital
2200 Hayes Street, San Francisco

SOUTHERN SIERRAS SANATORIUM
Scientific Treatment of Tuberculosis
Banning, California

DIABETES

is becoming a health problem

UNITS 40
UNITS 40
10 cc.
400 units
Insulin Squibb
Insulin Reg. U.S. Pat. Off.
Pat'd 10, 9, '23 & 12, 23, '24
Each cc. = 40 Units
Made under License from the University of Toronto
E. R. SQUIBB & SONS, N.Y.
Lab., New Brunswick, N.J.

Insulin Squibb is highly purified, highly stable and remarkably free from reaction-producing proteins. The great care taken in the assay of Insulin Squibb makes it uniform in potency and always dependable. More institutions, more physicians and more patients are using Insulin Squibb than ever before.

. . . . attack it as such

THE definite increase in mortality resulting from diabetes indicates a greater prevalence of the disease. In New York City alone, in 1931, diabetes took more lives than Typhoid Fever, Measles, Scarlet Fever, Diphtheria, Whooping Cough and Cerebral Meningitis, all combined.*

Modern living with increased sugar consumption—over-eating—and lack of muscular exercise have contributed to the increase of diabetes and placed a greater responsibility on the physician to properly treat the disease and lessen its incidence.

In connection with the use of Insulin, E. R. Squibb & Sons have available a booklet entitled, "Insulin and the Management of the Diabetic Diet." This booklet discusses the clinical aspects of the disease—its treatment and its complications. Diet tables—dietetic foods and other informative material is included. We will be pleased to send you a copy upon request. Just fill in the coupon and mail it today.

---

* Dr. Charles Bolduan, *New England Journal of Medicine*, 7-14-32.

INSULIN
and the MANAGEMENT of the DIABETIC DIET
E. R. Squibb & Sons

INSULIN SQUIBB

E. R. SQUIBB & SONS,
Professional Service Dept.,
3207 Squibb Building, New York City

Please send me a copy of your booklet entitled, "Insulin and the Management of the Diabetic Diet."

Name ....
Street ....
City .... *State* ....

ALPHABETICAL LIST OF ADVERTISERS

Members of the California Medical Association can aid their Journal and the firms who advertise therein, by coöperation as indicated in the footnote on this page

Page
Alexander Sanitarium 38
Aloe Co., A. S. 26
Approved Clinical Laboratories 22

Barry Co., The James H. 20
Bausch & Lomb Optical Co. 24
Borden Co., The 5
Broemmel's Prescription Pharmacies 3
Bush Electric Corporation 1

California Lima Bean Growers' Association 26
Calso Water Co. 30
Camp, S. H. & Co. 12
Canyon Sanitarium 35
Certified Laboratory Products 37
Chicago Eye, Ear, Nose and Throat Hospital 9
Children's Hospital, Physiotherapy Course 9
Classified Advertisements 10
Colfax School for the Tuberculous 40
Compton Sanitarium and Las Campanas Hospital 24
Cutter Laboratory .... 4 Cover

Dante Sanatorium 14
Dewar & Hare Electric Co. 3
Diederich Optical Co., Inc. 29
Doctors' Business Bureau 34
Dry Milk Co., The .... 3 cover

Page
Four-Fifty Sutter 30
Franklin Hospital .... 4 cover
French Hospital 28

Golden State Co., Ltd. 19
Greens' Eye Hospital .... 2 Cover
Greer Home 9
Guth, C. Rodolph, Clinical Laboratories 10

Hospitals and Sanatoriums 6
Hynson, Westcott & Dunning, Inc. 39

La Loma Feliz 10
Las Encinas Sanitarium 3
Lilly & Company, Eli 32
Livermore Sanitarium 25

Mead Johnson & Co. 16
Mulford Biological Laboratories 13

New York Polyclinic Medical School and Hospital 9

Officers of the California Medical Association 2-4
Officers of Miscellaneous Medical Associations 6

Parke, Davis & Co. 33
Petrolagar Laboratories, Inc. 27

Page
Postgraduate Instruction 9
Pottenger Sanatorium 17

Physiotherapy Course, Children's Hospital 3
Purity Spring Water Co. 3

Riggs Optical Company 36

Saint Francis Hospital 9
San Francisco Bank, The 36
Sharp & Dohme 13
Shumate's Prescription Pharmacies 3
Soiland, Albert (Radiological Clinic) 39
Southern Sierras Sanatorium 18
Squibb & Sons, E. R. 7
Stacey, J. W., Medical Books 11
Stuart Oxygen Co. 15
St. Luke's Hospital 38
St. Mary's Hospital 21

Travers and Hennig, Inc. 9

Union Square Building 23

Walters Surgical Company 11

ON CO-OPERATION WITH ADVERTISERS

California and Western Medicine, the Journal of our Association, in its present form, is made possible in part because of the generous coöperation of firms who believe that its pages can successfully carry a message concerning their products to a desirable group of present and future patrons.

The five thousand and more readers of California and Western Medicine often have occasion to purchase articles advertised in this publication.

Other things being equal, it would seem that reciprocal courtesy and coöperation should lead our members to give preference to those firms who place announcements in our publication.

Coöperation might go even farther than that. When ordering goods from our advertisers, mention California and Western Medicine. By the observance of this rule, a distinct service will be given your Association, its Journal and our advertisers.

A SERVICE AGENCY—FOR READERS

The Journal of the American Medical Association and the A. M. A. Coöperative Medical Advertising Bureau of Chicago maintain a Service Department to answer inquiries from you about pharmaceuticals, surgical instruments and other manufactured products, such as soaps, clothing, automobiles, etc., which you may need in your home, office, sanitarium or hospital.

We invite and urge you to use this Service. It is absolutely *free* to every member of the California and Nevada Associations. The Coöperative Bureau is equipped with catalogues and price lists of manufacturers, and can supply you information by return mail.

Perhaps you want a certain kind of instrument which is not advertised in California and Western Medicine, and do not know where to secure it; or do not know where to obtain some automobile supplies you need. This A. M. A. Service Bureau will give you the information. Whenever possible, the goods will be advertised in our pages; but if they are not, we urge you to write direct to the Coöperative Medical Advertising Bureau, 535 N. Dearborn Street, Chicago, Illinois. California and Western Medicine and the A. M. A. Service Bureau desire to serve *you*.

The New York Polyclinic

MEDICAL SCHOOL AND HOSPITAL

(Organized 1881)

(The Pioneer Post-Graduate Medical Institution in America)

We announce

POST-GRADUATE INSTRUCTION

for the

GENERAL PRACTITIONER

For information address MEDICAL EXECUTIVE OFFICER: 345 W. 50th St., New York City

POSTGRADUATE COURSE
For Graduates in Medicine
Eye, Ear, Nose and Throat
A house doctor is appointed July 1st and Jan. 1st

LABORATORY COURSE
For Nurses and Graduates of High School
CLASSES LIMITED TO SIX
X-Ray, Basal Metabolism, Electro-cardiography
and Physical Therapy

150 clinical patients daily provide material for classes. Positions with attractive salaries in hospitals and with group doctors await qualified Technicians

For particulars regarding either course write

CHICAGO EYE, EAR, NOSE AND THROAT HOSPITAL, 231 West Washington Street, Chicago, Illinois

SAINT FRANCIS HOSPITAL
AND
SCHOOL OF NURSING

A General Hospital With Accommodations for Three Hundred Patients

DIRECTORS

JOHN GALLWEY, M. D.
W. B. COFFEY, M. D.
THOS. E. SHUMATE, M. D.
C. R. BRICCA, M. D.

W. W. WYMORE, M. D.
JOHN H. GRAVES, M. D.
Superintendent, V. W. OLNEY

J. H. O'CONNOR, M. D.
R. K. SMITH, M. D.
H. E. MANWARING
W. H. LINFORTH

Address Communications

SAINT FRANCIS HOSPITAL

Bush and Hyde Streets
Telephone PROSPECT 7600
San Francisco

TRAVERS AND HENNIG, INC.

DEPENDABLE

PHYSICIANS' AND HOSPITAL SUPPLIES

429 Sutter Street ✓ San Francisco ✓ Telephone SUtter 8596

Mail Orders Given Prompt Attention :: Complete Stock on Hand

ABDOMINAL SUPPORTERS, ELASTIC STOCKINGS, TRUSSES, ETC.

EXPERT FITTERS IN ATTENDANCE

Specializing in

RECUPERATIVE AND NERVOUS CASES

Hydro-Therapeutic Treatments ✓ ✓
Occupational Therapy Department
included in weekly or monthly rates

Attractive location and recreational surroundings with absence of hospital atmosphere. Inspection invited. Only referred cases of qualified physicians accepted.

The GREER HOME, Inc.

Corner 36th Avenue and Fulton Street
SAN FRANCISCO, CALIFORNIA
Telephone EVERGREEN 9645

PHYSIOTHERAPY COURSE

Children's Hospital ✓ 4614 Sunset Blvd.

LOS ANGELES, CALIFORNIA

Given by the doctors on the staff and the Director of Physiotherapy for graduate nurses and graduates of Physical Education.

SEPTEMBER 11, 1933–SEPTEMBER 7, 1934

Tuition $125

CLASSIFIED ADVERTISEMENTS

Rates for these insertions are $4 for fifty words or less; additional words 5 cents each.

COACHING FOR STATE BOARDS—MEDICAL AND dental. Arthur H. White, M. D., Suite 1005, Flood Building, San Francisco.

FOR SALE IN ARIZONA—GENERAL PRACTICE. ESTABlished thirteen years. Copper and silver mining district. Town of 8,000. Draws from surrounding population of 25,000. Good churches and schools, including accredited high school. Average monthly cash collection, $1,500. Will sell for $1,200, monthly pay plan. Address, Box 700, California and Western Medicine.

HOSPITAL FOR SALE. FOURTEEN BED HOSPITAL, fully equipped. None other in fifteen miles. Excellent opportunity for man and wife, who are both nurses, to make a paying investment. Reason for selling: hospital owned by physician who has no time to operate same. $25,000 invested, but will sell for $15,000. Must have $10,000 cash. Address Box 1598, Brawley, California.

PATHOLOGIST, ROENTGENOLOGIST, M. D., WITH TEN years' experience in charge of major laboratories; prefer pathology, but able to handle efficiently and thoroughly both specialties. Have long experience in allied fields of biochemistry, metabolism, and electrocardiography. Desire part or full time position with hospital, clinic, or group. Address, Box 710, California and Western Medicine.

One of the most important items in a nation's wealth consists in the healthfulness and vigor enjoyed by its people.—Horace Mann (1845).

Can you account him wise or discreet that would willingly have his health and yet will do nothing that should procure or continue it?—Robert Burton.

George Washington was ill a month with smallpox when he visited the Barbados in 1751.

La Loma Feliz

(HAPPY HILLSIDE)

Residential School for children handicapped by heart disease, asthma and kindred conditions.

Offers consistent medical attention and regular schooling. No tuberculous or mentally retarded children.
Situated on a ranch in the foothills near Santa Barbara. Dry equable climate by actual weather bureau observations.

P. O. Box 585
Telephone No. 22349

INA M. RICHTER, M. D.
Director

Mission Canyon Road
Santa Barbara, California

IN FUNCTIONAL

Hepatic Insufficiency

DECHOLIN

(Riedel—de Haen)
(Dehydrocholic Acid)

The Efficient Choleretic for Oral or Parenteral Administration

A stable bile acid of low toxicity and exceptional purity, in tablet form for oral use, and its salt (Decholin-Sodium) for intravenous administration. Through direct action on the liver cells, it increases the flow of bile from 100% to 200%, effectively flushing out the liver and the biliary tract. Its strong diuretic action is valuable when heart disease accompanies hepatic dysfunction. In cholecystography, it hastens the appearance of the gall bladder shadow.

C. RODOLPH GUTH
BIOLOGICS & THERAPEUTIC SPECIALTIES
WILLIAM H. BANKS, M. D., Medical Director
PHONE KEARNY 3644
811 Flood Bldg. San Francisco, Calif.
ASSOCIATED WITH
FRATES & LOVOTTI, PROFESSIONAL PHARMACISTS

False Rumors Concerning Viosterol Denied by Doctor Steenbock.—Ever since viosterol was offered to the medical profession about four years ago, it has been attacked by various persons. Some of these attacks no doubt were sincerely motivated, but others were seized upon and exaggerated by interests who had no viosterol to sell.

Recently a new form of anti-viosterol propaganda has been reported by physicians all over the country. It is circulated by word of mouth—never in writing—and the apparent purpose is to influence physicians to prescribe vitamin D agencies other than viosterol.

Physicians are being told, for example, that Dr. Harry Steenbock has "condemned" viosterol, that the Wisconsin Alumni Research Foundation "would withdraw viosterol from the market in ninety days," etc.

In answer to these malicious untruths, Dr. Harry Steenbock makes the following statement:

"Viosterol in its various forms has to date been found fully as valuable in medical practice as was anticipated at the time that it was first introduced to the American markets. Up to the present time there have been no reports of any untoward effects from its administration, although originally it was anticipated from the results of animal experiments that some cases of intoxication might result from its use in human medicine. . . . I see no necessity for reversing my original opinion as to its outstanding merits in any way whatsoever. Any statement to the contrary can be definitely labeled as false." (Signed) H. Steenbock.

Physicians can draw their own conclusions and form their opinions of any house that resorts to sharp practices by allowing its representatives to spread unfounded whispering campaigns against a valuable therapeutic agent that has endured four years of the most searching experimental investigation and clinical use not only in rickets, but also for controlling calcium-phosphorous metabolism generally.

BOOK REVIEWS

List of Books Received

BOOKS RECEIVED

Surgical Pathology. By William Boyd, M. D., M. R. C. P. Ed., F. R. C. P. Lond., Dipl. Psych., F. R. S. C., Professor of Pathology, University of Manitoba; Pathologist to the Winnipeg General Hospital, Winnipeg, Canada. Third Edition, Thoroughly Revised. Cloth. Pp. 866, with 477 illustrations and 13 colored plates. Price, $10 net. Philadelphia and London: W. B. Saunders Company, 1933.

Obstetrics and Gynecology. By Eighty Leading Specialists. Edited by Arthur Hale Curtis, M. D., Professor and Head of the Department of Obstetrics and Gynecology, Northwestern University Medical School; Chief of the Gynecologic Service, Passavant Memorial Hospital, Chicago, Illinois. Volume I. Cloth. Pp. 1165, with 1,664 illustrations. Price, (three volumes), $35 net. Philadelphia and London: W. B. Saunders Company, 1933.

Medical State Board Examinations. Topical Summaries and Answers. An organized review of actual questions given in medical licensing examinations throughout the United States. By Harold Rypins, A. B., M. D., Secretary, New York State Board of Medical Examiners; Member National Board of Medical Examiners; Associate in Medicine, Albany Medical College; Former President, Federation of State Boards of Medical Examiners of the United States; Former Instructor in Medicine, University of Minnesota. Cloth. Pp. 448. Price, $4.50. Philadelphia, Montreal, and London: J. B. Lippincott Company, 1933.

Diet in Sinus Infections and Colds. By Egon V. Ullmann, M. D., Formerly Special Lecturer of Biology at the Oregon State College; Instructor at the First Medical Clinic at the University of Vienna, Demonstrator at the Laryngological Clinic at the University of Vienna. Recipes and Menus. By Elza Mez. Cloth. Pp. 166. Price, $2. New York: The Macmillan Company, 1933.

The Collected Papers of the Mayo Clinic and the Mayo Foundation. Volume XXIV, 1932. Edited by Mrs. Maud H. Mellish-Wilson and Richard M. Hewitt, B. A., M. A., M. D. Cloth. Pp. 1205, with 233 illustrations. Price, $11.50 net. Philadelphia and London: W. B. Saunders Company, 1933.

Surgical Anatomy. By C. Latimer Callander, A. B., M. D., F. A. C. S., Assistant Clinical Professor of Surgery and Topographic Anatomy, University of California Medical School; Associate Visiting Surgeon to the San Francisco Hospital. With a Foreword by Dean Lewis, M. D., Sc. D., F. A. C. S. Cloth. Pp. 1115, with 1280 illustrations, some in colors. Price, $12.50 net. Philadelphia and London: W. B. Saunders Company, 1933.

Notes on Vitamins and Diets. By Daniel Thomas Quigley, M. D., F. A. C. S., Instructor in Surgery in the University of Nebraska College of Medicine; Fellow of the American Medical Association. Cloth. Pp. 128, with illustrations. Price, $1. Chicago: Consolidated Book Publishers, Inc., 1933.

International Clinics. A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles on Treatment, Medicine, Surgery, Neurology, Pediatrics, Obstetrics, Gynecology, Orthopedics, Pathology, Dermatology, Ophthalmology, Otology, Rhinology, Laryngology, Hygiene, and Other Topics of Interest. By Leading Members of the Medical Profession Throughout the World. Edited by Louis Hamman, M. D., Visiting Physician, Johns Hopkins Hospital, Baltimore, Maryland. Volume II, Forty-Third Series. Cloth. Pp. 314. Philadelphia, Montreal, and London: J. B. Lippincott Company, 1933.

BOOK REVIEWS

Clinical Aspects of the Electrocardiogram, Including the Arrhythmias. By Harold E. B. Pardee. Third edition. Pp. 295. Illustrated. New York: Paul B. Hoeber, 1933. Price, $5.50.

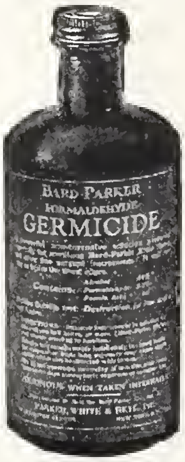
The third edition of this standard work has been brought up to date satisfactorily. The sections on the ventricular complex and its variations are notably complete. The definition of the type of bundle branch block given in this edition is the reverse of that in previous editions, but this subject is still under debate. There is an excellent section on the construction and operation of various types of electrocardiographs. W. D.

NEW - - **BOOKS** - - NEW

Bloomfield & Polland: Gastric Anacidity . $2.50
Cowdry: Arteriosclerosis 5.00
Hunt: Chronic Indigestion 3.00
Lipscomb: Diseases of Old Age 3.50
Sure: The Vitamins in Health and Disease . 2.00

Books gladly sent on approval

J. W. STACEY, INC.
Medical and Scientific Books
GArfield 0838
236-238 Flood Bldg. San Francisco



Physicians' Surgeons' and Hospital Supplies

WALTERS
SURGICAL COMPANY

521 Sutter Street
SAN FRANCISCO

GArfield 7995

The Pelvis in Obstetrics—A Practical Manual of Pelvimetry and Cephalometry, Including Chapters on Roentgenological Measurement. By Julius Jarcho. Pp. 365. Illustrated. New York: Paul B. Hoeber, Inc., 1933. Price, $6.

Both from the historical point of view and in every other respect this careful work covers thoroughly the entire subject of pelvimetry, both external and internal, as well as that of fetal cephalometry *in utero.* It can therefore be recommended to the student who wishes to inform himself about this difficult art. However, since in the chapter on the normal female pelvis and again in that on the abnormalities and deformities of the pelvis the author calls attention to the fact that ethnological differences occur in the measurement values of the pelvic diameters and that these differences have considerable practical significance, this book should appeal especially to the metropolitan obstetrician whose clientele is apt to include individuals representative of many racial types.

Excellent from a typographical standpoint, the text is well written and elucidated by numerous illustrations, most of which are original. An exhaustive bibliography is appended. K. L. S.

How to Budget Health Guilds for Doctors and Patients. By Evans Clark. Pp. 328. Published for Twentieth Century Fund, Inc. New York and London: Harper & Brothers, 1933. Price, $4.

This book of 328 pages, including 39 pages of appendices and index, is a discussion of the cost of medical care and a proposal to establish medical guilds to provide medical care more cheaply. The summary of facts has been made from the results of an independent survey of three years by the Twentieth Century Fund, and the report of the Committee on the Costs of Medical Care.

After reviewing the facts acquired by these reports and discussing various group organizations such as the Mayo Foundation, the Cornell Pay Clinic, industrial organizations for the medical care of employees and their families, university organizations for the medical care of students, etc., the author proposes the medical guild as a partial solution of the problem.

"It is proposed that the same methods of organization which have been successfully applied to other forms of business and public service be also applied to medical care, with such modifications as are essential because of the differences between the practice of medicine and other occupations. It is suggested that the three elements, professional organization, group payment, and periodic ex-

(Continued on Next Page)

A Maternity Support Typed for the Large Woman

In properly fitting an expectant mother with a maternity support, a tall, slender figure requires a straight-line model; a small, petite figure, a short, lightly boned one; a large, well-developed figure, a full, long-hipped one. Camp garments are proportioned to all figure types in stature and other individual respects.

An example of a proper model for the large woman with heavy thighs (No. 3123) is illustrated on an actual seven-month pregnancy case. Like all Camp maternity supports it possesses the exclusive Camp Patented Adjustment feature which adapts it to figure and to changes in pregnancy. In this case, it has one set of adjustment straps with extra lacing from waist to top. It provides firm under-abdominal and sacro-iliac support and relieves undue pressure on organs.

Approved and recommended by leading physicians. Sold by Surgical, Drug and Department Stores and Corset Shops. Write for Physician's Manual.

CAMP TRADE MARK

Physiological Supports

S. H. CAMP & COMPANY

Manufacturers, JACKSON, MICHIGAN

CHICAGO
1056 Merchandise Mart

NEW YORK
330 Fifth Avenue

LONDON
252 Regent Street W.

BOOK REVIEWS

(Continued from Preceding Page)

aminations, be combined in medical service institutions offering to the public all-around medical care at a fixed annual fee." (Page 7.)

The text is well written and, in view of the present-day discussion of the problem of medical care for the man of moderate income, is of considerable interest. The facts are stated clearly, and an honest attempt is made to provide a solution. Whether one agrees or disagrees with the conclusions of the author, the book is well worth reading. E. C. D.

Asthma, Hay Fever, and Related Disorders—A Guide for Patients. By Samuel M. Feinberg. Pp. 124. Illustrated. Philadelphia: Lea & Febiger, 1933. Price, $1.50.

Although many books on allergy and allergic conditions have appeared during the past few years, none has been written primarily for the patient. Doctor Feinberg's book aims to present in simple language a primer for the allergic patient in order to achieve that coöperation between doctor and patient on which successful treatment of such allergic conditions as hay fever and certain forms of asthma depends. Not unlike many of the recent primers for the diabetic, this book presents the essential information which every allergic patient should possess. Of particular value not only to the patient but also to the nurse and general practitioner is the chapter on Special Data, containing a list of the foodstuffs, in which some of the common sensitizing foods such as milk, wheat, and eggs are to be found, as well as a list of household articles which contain many of the common animal hairs. In this field the author's knowledge is especially authoritative. The chapters on treatment will afford the patient a clear understanding of what may be expected from the new methods of treatment. I believe the author has presented this phase of the subject in a conservative manner.

Whereas the book is primarily intended for the patient, the general practitioner who wishes only a bird's-eye view of this subject may read it with profit. S. H. H.

The Medical Secretary. By Minnie Genevieve Morse. Pp. 162. New York: The Macmillan Company, 1933.

This little book is intended to aid the nurse without secretarial training and the secretary without nursing education when either is about to assume duties in a doctor's office. It contains much sound advice, many helpful definitions, and several suggestions on, among other things, the proper preparation of medical manuscripts. While not by any means new or novel, the latter will probably be read with profit by many medical men themselves.

Some of the definitions, such as those defining an epiphysis, the insertion of a muscle, diabetes mellitus, etc., should be revised in the next edition. Definitions of such rare operative procedures as aneurysmectomy, adrenotomy, hepatotomy, and esophagoplasty seem to the reviewer to be superfluous in a book of this kind; similarly, such rare disorders as Friedreich's hereditary ataxia seem hardly worth inflicting on the uninitiated. Mention of leukopenia might be added to the paragraph on "Blood." Another suggestion is that, since British articles sometimes fall into the hands of secretaries for abstraction, the correct English spelling of common words like oedema, anaemia, caecum, and oesophagus might be appended at the back of the volume.

The book will be of considerable value to most office assistants and perhaps to not a few medical men themselves. L. H. G.

Clinical Diagnosis—Physical and Differential. By Neuton S. Stern. Pp. 364. New York: The Macmillan Company, 1933. Price, $3.50.

This book devotes 65 pages to history taking and physical diagnosis; 52 pages to special methods of examination; 10 pages to special diagnosis of pulmonary tuberculosis; 60 pages to heart disease.

There is an interesting chapter on the technique of making a diagnosis, with case histories in which the anamnesis and physical findings are accompanied by parenthetical ruminations of the examiner. There is an alphabetical list of symptoms and their differential diagnosis.

The book is clearly written and has been well published; it will be useful only in so far as it fits into a definite teaching program. W. D.

Diseases of the Heart Described for Practitioners and Students. By Sir Thomas Lewis. Pp. 297. Illustrated. New York: Macmillan Company, 1933. Price, $3.50.

A small volume, not intended to be a reference work for rare conditions, and with studied simplicity and avoidance of much technical detail, this latest contribution of Sir Thomas Lewis focuses a light of remarkable brilliance on the essential features of heart disease. It will be valued by the physician with a small bag of implements and a large zest for observation and reflection. But it

(Continued on Page 14)

The easier Way to Vaccinate with Smallpox Vaccine Mulford

VACCINE VIRUS
Smallpox Vaccine—Improved Tube-Point
Adapted to the use of either the "Scratch" or "Multiple Pressure" Method of Vaccinating
KEEP ON ICE
USE AT ONCE ON REMOVAL

Busy physicians appreciate the time-saving MULFORD TUBE-POINT. Four simple operations.

Place rubber bulb on small end of tube-point and break the tip inside the bulb.

Break the tube-point at the file mark without contamination of the tip.

Expel the virus from the tube directly on the previously cleansed area of the skin.

Transfer tube-point to right hand. Holding point parallel to the skin surface, apply pressure through the virus, with an up-and-down motion, repeated 20 to 30 times.

THE Mulford Improved Capillary Tube-Point brings speed and greater safety to smallpox vaccination. It is a sterile, sealed vaccine container and inoculating instrument all in one.

This unique, time-saving container is ready for immediate use with any of the approved technics—multiple pressure, puncture, or scratch.

Smallpox Vaccine Mulford delivers a high percentage of "takes" . . . it is uniform . . . it carries assurance of potency and purity, because exhaustive tests are carried out on each lot before release.

Smallpox Vaccine Mulford is backed by 35 years' continuous experience and research. It is a vaccine you can rely on.

Smallpox Vaccine Mulford is available in the following packages: Capillary Improved Tube-Points—Single's and Ten's. Capillary Tubes—Ten's.

MULFORD BIOLOGICAL LABORATORIES

Sharp & Dohme

PHILADELPHIA BALTIMORE MONTREAL

DANTE SANATORIUM

Known for the High Standard of Cuisine and Service

Broadway and Van Ness Avenue
SAN FRANCISCO CALIFORNIA
Edward A. Trenkle, *Managing Director* *Telephone* GRaystone 1200

BOOK REVIEWS

(Continued from Page 12)

should also be read by the cardiologists. For, with insight in the domain of cardiovascular phenomena derived from long preëminence in technical research, Lewis, like Mackenzie, enjoys the rare mental poise necessary to realize that, in practice, the machinery of diagnosis is subordinate in value to the well-considered array of symptoms and simple physical signs. The product of a rich clinical experience, clothed in clear, concise and beautiful English, the text is one to be read without skipping.

E. S. K.

Principles of Chemistry. An introductory textbook of inorganic and physiological chemistry for nurses and students of home economics and applied chemistry with laboratory experiments. By Joseph H. Roe. Second edition. Pp. 427. St. Louis: C. V. Mosby Company, 1930. Price, $2.50.

This outline of chemistry is intended to serve as a textbook for student nurses during a course of study covering a period of from forty-five to sixty hours. For such a purpose it answers very well.

The text is elementary in character, being that usually covered in the curriculum of a high school. In the first half of the volume there are chapters on physiological chemistry, metabolism, vitamins, basic food requirements, and the internal secretions. These subjects are explained clearly and concisely, and successfully accomplish the object in view. The second half of the book is devoted to practical laboratory procedures.

E. A. V.

The Ability to Pay for Medical Care. (Publications of the Committee on the Costs of Medical Care, No. 25. Price, $2.) By Louis S. Reed. **The Incidence of Illness.** (Publications of the Committee on the Costs of Medical Care, No. 26. Price, $3.) By I. S. Falk, Margaret C. Klem, and Nathan Sinai. **The Costs of Medical Care.** (Publications of the Committee on the Costs of Medical Care, No. 27. Price, $4.) By I. S. Falk, C. Rufus Rorem and Martha D. Ring, with a foreword by Ray Lyman Wilbur. Chicago: The University of Chicago Press, 1933.

These three volumes constitute the last of the compilations of the Committee on the Costs of Medical Care from which the widely publicized recommendations were drawn. They are largely statistical in nature, and the contents and conclusions are too diverse and multitudinous for inclusion in a summary of this nature. Whether or not one agrees with the methods by which data has been accumulated or with the conclusions drawn from such data, admiration must be expressed for the accumulation of such a mass of pertinent detail. These volumes of reference have not outlived their usefulness with the publication of the recommendations of the committee, but will be a source from which future studies may well take their start.

Of the many conclusions already drawn, two seem to stand out as irrefutable. The first, that the sum total of the costs of medical care is not excessive and is, indeed, probably too low. The second, that the prevalent dissatisfaction is due to the unevenness of the cost of medical care.

During the past year a great deal of interest has been aroused within the medical profession regarding their economic problems, and these volumes will prove to be of great value to those who wish to pursue the study further.

G. F. C.

Handbook of Bacteriology for Students and Practitioners of Medicine. Joseph W. Bigger. Pp. 459. Third edition. New York: William Wood & Company, 1932.

The first edition of this excellent book was published in 1925 to meet the requirements of "students of medicine and for those practitioners who have not specialized in bacteriology."

The author has attempted to reduce the theoretical to a minimum and to emphasize the importance of bacteria only as causes of disease. How great was his success is shown by the fact that there have been two new editions and one reprinting within seven years.

The book contains 443 pages and index, is beautifully written and well illustrated. It has been brought well up to date in the many fields in which recent developments have been of importance. The author has been remarkably successful in assembling the facts which are of importance to medicine without burdening the text with details which are of particular interest only to the bacteriologist. There is, perhaps, less attention paid to some of the recent work in the United States than to that done in Great Britain and Europe, but on the whole each topic is adequately portrayed. The number of typographical errors is small, and the volume is of convenient size and well bound.

For practitioners who are interested in the application of bacteriology to medicine, and not in the complete scientific detail of the subject, the book is to be highly recommended.

(Continued on Page 17)

STUART MEDICAL GASES

Announcing the NEW

Hi-Pure
Nitrous Oxide

99.5% PURE

OUR laboratory research extending over a three year period has resulted in a new method of reprocessing nitrous oxide, attaining a purity in excess of 99.5%. This is accomplished by removing the free nitrogen often present up to 5%.

It is believed this will permit using higher percentages of oxygen in nitrous oxide-oxygen anaesthesia.

We are now prepared to furnish this reprocessed 99.5% pure nitrous oxide at a price only slightly higher than that prevailing on our standard product which conforms in all particulars to U.S.P. standards.

We invite inquiries and comments.

We will be glad to show you how to test your Nitrous Oxide for its free nitrogen content

STUART OXYGEN CO.

2857 Ettie Street
OAKLAND
HIgate 0345

211 Bay Street
SAN FRANCISCO
DOuglas 5138

723 East Ninth Street
LOS ANGELES
VAndyke 8484

MEASURE PRESCRIBED AMOUNT INTO

CEREAL BOWL....ADD HOT WATER AND

STIR WITH FORK....ADD MILK OR CREAM

AND *Serve*

PABLUM

SUPPLIED IN 1-POUND CARTONS AT DRUG STORES

Pre-cooked Mead's Cereal Dried . . . Ready to Serve

Consists of wheatmeal, oatmeal, cornmeal, wheat embryo, yeast, alfalfa leaf, and beef bone. Supplies vitamins A, B, E, and G and calcium, phosphorus, iron, copper, and other essential minerals.

Sugar and Salt to Taste for Older Children and Adults

PABLUM is unique among cereals. For it is not only richer than any others in a wider variety of vitamins and minerals but it is also the only precooked cereal which is dry-packed yet which can be served hot.

To prepare Pablum for the infant, all the mother need do is measure the prescribed amount directly into the cereal bowl and add boiled hot water, stirring with a fork. (Milk or water-and-milk of any temperature may be used for infants—cream for older children and adults.)

This ease of preparation makes Pablum especially welcome in families where the benefits of hot cereals are often denied simply because the process of cooking ordinary cereals is too long and too bothersome. As it is a dry cereal, Pablum keeps indefinitely and requires no refrigeration. Being dry, only cereal is paid for, not added water. This fact plus the manner in which it is prepared makes Pablum "economical, — no waste."

Like Mead's Cereal, Pablum represents a great advance among cereals in that it is richer in minerals (principally calcium, phosphorus, iron, and copper) and vitamins (A, B, E, and G), it is base-forming, and it is non-irritating. Added to these special features it is abundant in protein, fat, carbohydrates and calories.

Unlike many foods that are "good for growing children," Pablum *tastes good.*

MEAD JOHNSON & CO., Evansville, Indiana, *Pioneers in Vitamin Research*

Please enclose professional card when requesting samples of Mead Johnson products to cooperate in preventing their reaching unauthorized persons

POTTENGER SANATORIUM AND CLINIC
FOR DISEASES OF THE CHEST MONROVIA, CALIFORNIA

Twenty-eight years' experience in meeting the problems of the tuberculous patient.
Located in the foothills of the Sierra Madre mountains, at an elevation of 1000 feet. Sixteen miles east of Los Angeles, on the main line of the Santa Fe. Reached also by the Pacific Electric. Equipped for the scientific treatment of tuberculosis and other diseases of the chest. Beautiful surroundings. Close personal attention. Excellent food.
A clinic for the study and diagnosis of all diseases of the chest, including asthma, lung abscess and bronchiectasis is maintained in connection with the institution.
Weekly rates from $25 up, including medical attention, medicines (except expensive remedies), and general nursing. Extra charge for operative measures except pneumothorax.

Los Angeles Office
WILSHIRE MEDICAL BUILDING
1930 Wilshire Boulevard

For particulars address:
POTTENGER SANATORIUM
MONROVIA, CALIFORNIA

BOOK REVIEWS

(Continued from Page 14)

For medical students it is an excellent medium of correlation of the many facts which are made available in an academic course in bacteriology. E. C. D.

Synopsis of Gynecology Based on the Textbook—Diseases of Women. By Harry Sturgeon Crossen and Robert James Crossen. Pp. 227. Illustrated. St. Louis: The C. V. Mosby Company, 1932. Price, $2.75.

This publication represents an effort to condense the contents of a large and useful book into a small volume. It is, however, neither a synopsis nor a manual, but simply an abbreviated form of Crossen's well-known monograph on gynecology set down in very fine print. As a reference pocketbook for the busy doctor it may well have a place. But it should be understood that, while this volume is quite complete in itself, it does not lend itself to the purposes of medical teaching nor does it take the place of Crossen's textbook of gynecology, which remains one of the best reference books on this subject at the disposal of the American student and practitioner. L. A. E.

The Principles and Practice of Obstetrics. By Joseph B. De Lee. Sixth edition. Pp. 1165. Illustrated. Philadelphia and London: W. B. Saunders Company, 1933.

It is manifestly impossible to review completely a volume of this sort. The author has simply modernized his previous work. A section dealing with the Aschheim-Zondek pregnancy test has been added. A brief section sets forth the latest thought regarding endocrine relationships. A number of new illustrations have been added and some of the old ones replaced. A few chapters have been completely rewritten in order to bring them into line with modern concepts.

The book is extremely complete. Almost every possible contingency is thoroughly discussed and the proper method of handling indicated. The presentation of the material is principally from the clinical point of view and reflects a vast experience. These facts make of it just what the author hoped—"an ever-present help in time of trouble." It is eminently suited to the needs of the practitioner, whether he be specialist or otherwise.

An unusually nice feature is the inclusion of little warnings of things not to do, accidents to look out for, preparations to be made before attempting particular procedures. The sections dealing with purely obstetric procedures and problems leave little to be desired. Conduct of normal labor, the mechanism of labor, the technique and indications for applying forceps, version and extraction, cesarean section, the handling of cases of antepartum bleeding, are considered in such intimate, practical detail that they are easily visualized by the student or practitioner. The author has not only set forth what happens and how it happens, but he has also clearly indicated what the accoucheur should do about it.

The book has a number of unfortunate defects. The English employed is frequently very poor indeed. Many paragraphs are wordy and involved. There is considerable unnecessary repetition—principally a fault in organization of material. One chapter is entitled "Toxemias of Pregnancy Continued and Sundry Diseases." The author has a curious habit of employing awkward Latin terms, often interchangeably with their much simpler English meanings, e. g., *vitium cordis* for heart disease, *ruptura uteri* for rupture of the uterus, *funis* for cord, *edema pulmonum* for pulmonary edema, etc. On the other hand, a man's name is frequently used to indicate a particular disease or anatomical structure instead of the perfectly proper and more easily understood medical term. These features are sufficiently prominent to become quite irritating when one reads a considerable portion of the book at one time.

These are minor criticisms, however, and do not detract in any important way from the value of the book. A keen clinician has set down on paper the fruits of a long and extensive experience; his observations are distinctly worth while despite occasional lack of finesse in presentation. Everyone who practices obstetrics should have a copy easily accessible. D. G. M.

The Sputum—Its Examination and Clinical Significance. By Randall Clifford. Pp. 167. Illustrated. New York: The Macmillan Company, 1932. Price, $4.

The author has gathered and systematically arranged in a compact volume information regarding the sputum which is generally found only by consulting more than one source.

The subject-matter has been considerably enriched by the addition of both clinical and pathological data drawn from the author's experience and observations.

The monograph is divided into four general sections: 1. General Observations. 2. The Microscopic Examination. 3. The Macroscopic Examination. 4. The Character and Clinical Significance of the Sputum in Some of the More Common Diseases of the Bronchi and Lungs.

The fourth section is especially valuable. It correlates material presented in the first three sections, with the clinical picture presented by some of the more important

(Continued on Next Page)

Southern Sierras Sanatorium

for
Tuberculosis and Allied Affections
BANNING, CALIFORNIA

SERVICE...
A commodity that cannot be satisfactorily pictured or described

EVIDENCE of the quality of service rendered in the *Southern Sierras Sanatorium* is furnished by its sustained reputation for satisfaction.

PROOF of the quality of service rendered can be secured only by an actual sojourn in this sanatorium.

SEND your next patient to this restful retreat, where sympathetic interest awaits him, and we feel confident of your approval.

C. E. ATKINSON, M. D., *Medical Director*

BANNING
90 miles east of Los Angeles on main line of S. P.
Near but not upon the desert (altitude 2,400)
Unsurpassed climate, free from extremes.

Modern equipment and treatment
High ethical standards
Progress reports cheerfully furnished

BOOK REVIEWS

(Continued from Preceding Page)

diseased conditions of the bronchi and lungs. This is a unique feature of the book and should make it an important aid in differential diagnosis. H. A. W.

The Gold-Headed Cane. By William Macmichael. Edited by Herbert Spencer Robinson. Pp. 223. Illustrated. New York: Froben Press, Inc., 1932. Price, $3.50.

This is an old gem in a new setting. The book was published first in 1827 and again in 1828. These two old editions are now very scarce and difficult to obtain. There was a third in 1884, all of these three printed in London. A fourth was issued in 1915 by Hoeber in New York, with an introduction by Sir William Osler. The present edition is the fifth, first published in London in 1923, now reprinted in New York by The Macmillan Company. It contains the text and original illustrations of the second edition, but with additional notes and fine portraits of the men whose biographies it presents. For the book is a verbal picture of the lives of six physicians, who between 1689 and 1823 practiced their profession in London. The story is told by the gold-headed cane that each in succession possessed and that each one presented to the other as his time came to retire from active practice. It was carried first by Radcliffe, who was physician to William and Mary and later to Queen Anne. Then it passed to Mead, who was a scholar, a collector of books, prints, old coins, statues, gems and vases, as well as an able and successful practitioner; of whom it was said that of all the physicians who had ever flourished he gained the most, spent the most, and enjoyed the highest fame during his lifetime. The cane was carried next by Askew, who likewise was a diligent collector of books, manuscripts, and inscriptions, and a classical scholar of refined tastes. Next it passed into the possession of William Pitcairn and later of his nephew, David Pitcairn, both of them eminent and brilliant members of the medical profession of their day. Finally, the gold-headed cane was carried by Matthew Baillie, nephew of the famous John Hunter, noted, like his uncle, for his collection of anatomical preparations. It passed at last into the possession of the new College of Physicians in London, where it now reposes peacefully after one hundred and fifty years of active service. The story the gold-headed cane tells concerns not only the six men who carried it, but also many other persons who were their contemporaries and associates. The book is not only interesting and informative but inspirational as well, and should be on the library shelf of every physician. W. F. C.

TWENTY-FIVE YEARS AGO

(Continued from Page 72)

to the fact that diagnosis is particularly difficult, the infant being unable through lack of language to give any idea of the physical symptoms; and the young child too imaginative to correctly express the condition.

From an article on "Pathology of Acute Purulent Otitis Media and Indications for Operative Interference in Acute Mastoiditis with Report of Interesting Cases" by Cullen F. Welty, M. D., San Francisco.

In the majority of cases the primary process in the middle ear is that of acute, catarrhal inflammation, which is characterized by the presence of the exudate which develops rapidly, accompanied by more or less reaction. This effusion may be purulent or mucopurulent in character and involves the whole of the middle ear, and is usually of short duration. (By the middle ear we mean eustachian tube, tympanic cavity, and mastoid cells.) . . .

* * *

Discussion on Dr. Welty's Paper.—Dr. H. G. Thomas, Oakland: I think, going back to the root of the matter, too much stress cannot be laid on the diagnosis of adenoids in infants. This is not done often enough. The specialists do not see them frequently. The general practitioners do not look for them. I have been taught by the specialists to do it. We can only agree and lay emphasis on the fact that every case of snuffles we see is dead sure adenoids, in infants. . . .

Chicago Meeting of the American Medical Association:

The fifty-ninth annual session of the American Medical Association was held in Chicago, June 2 to 5. For the first time since the St. Paul meeting in 1901 the Association met in the center of the country. . . .

The report of the general secretary showed that the membership of the Association on May 1, 1908, was 31,343, a net gain for the past year of 3,828. . . .

The report of the Board of Trustees included the customary report from the auditing company, showing that the entire business for the fiscal year of 1907 was $385,030.89; that the total expenditures of the year had amounted to $356,222.21, leaving a net revenue for the year of $28,808.68. . . . The report showed that during 1907, 2,715,293 copies of *The Journal* had been issued, forming a weekly average of 52,217, an increase of 12½ per cent over 1906.

BOARD OF MEDICAL EXAMINERS

(Continued from Page 72)

"Found guilty by a jury of violating the State Medical Practice Act, Eugene Rinaldo yesterday evaded sentence in Municipal Judge Nye's court by interposing a motion for a new trial, hearing on which was set for the 15th instant. Witnesses, headed by William Byrne, investigator for the State Medical Board, told Judge Nye they saw signs on the door of Doctor Rinaldo's office at Beverly Boulevard and Vermont Avenue, advertising him as a physician, and found cards to the same effect on the table in his office. Rinaldo's license to practice was revoked last October by the State Medical Board, Byrne testified." (Los Angeles *Times,* June 7, 1933.) (Previous entries, September and December, 1928; February and September, 1929; September and December, 1930; June, 1931; July, 1932; May, 1933.)

"'Bitten by a cobra, clawed by a leopard, and wounded by a hostile Pigmy arrow,' and now resting in the San Francisco city jail—that is the tragic saga of Claude Bartlett, alias Horace Ippelthwaite, alias Dr. Daniel Davenport, born in Kansas, reared in darkest Africa, now blooming on the American lecture platform. The cobra, the leopard, and the arrow are all background of 'Fifteen Years' Participation in Scientific Expeditions,' if you believe his lecture circular. The city jail is the background formed by the State Board of Medical Examiners, who object to his title 'Dr.' and his initials 'M. D.' He prefers not to discuss just where he acquired his degree. He was arrested at his rooms at 4210 Balboa Street and held under $100 bond on a charge of misrepresenting himself as a physician. Bartlett asserts that he left New York in 1927 for Africa, intent on studying the dread tsetse fly. Up the Congo he went, through the Cameroons and out by Nigeria. En route he purchased a movie, a sort of animal and vegetable travelogue, and returned to show it, with success, until the Chicago Better Business Bureau stumbled across one Malemba, a cannibal, alias Firpo Jacko, a Harlem janitor. The 'doctor' has been on tour, lecturing on 'Pagan practices,' on 'Six Years Among the African Cannibals,' and other esoteric subjects. He has already spoken once at an exclusive Nob Hill Hotel, was billed to speak once more, 'And do they go for it,' he said." (San Francisco *Examiner,* June 8, 1922; *American Medical Association Journal,* October 17, 1931, page 1167.) He was recently reported as lecturing before high school classes in Los Angeles. According to the Alameda *Times-Star* of June 9, 1933, "Dr." Davenport pleaded guilty to using the name "Doctor" and received a thirty-day suspended sentence in the court of Municipal Judge Schonfeld of San Francisco.

"Estelle Barnes, head of the First Church of Psychic Science, yesterday was fined $100 by Municipal Judge Crumm, following her conviction by a jury on a charge of practicing medicine without a license. Half of the fine was suspended on condition that the defendant obey the law in the future. At her trial Mrs. Ethel Bowen and Mrs. Eva Denny testified to being

(Continued on Page 21)

Beating Back the Difficult Path to Health

HOW often the doctor recognizes that the case history before him points to a toxemia as the original source of the present manifestation of disease.

Helping your patient to beat back the difficult path to health by reaching this toxic condition and remedying it effectively and surely by Milk Therapy—through the use of sweet whole milk, L. Acidophilus Milk, Colon Culture and/or milk sugar — finds Golden State Company, Ltd., your qualified aide.

Displacement of putrefactive organisms of the intestinal tract through implantation of Lactobacillus Acidophilus depends upon careful laboratory control in the manufacture of both Acidophilus Milk and Colon Culture. You must be certain of viable organisms capable of implantation by preponderance. Golden State's Research Laboratories at San Francisco and Los Angeles give you this assurance, and stand ready to give you the benefit of our facilities for following the progress of prescribed courses of Milk Therapy. These laboratories are at the service of doctors throughout California.

A new and helpful monograph on the subject of L. Acidophilus Milk Therapy, written for the medical profession, awaits your request. Or, perhaps you would prefer to have our experienced Milk Therapy representative call upon you. We would count it a pleasure. You would find it profitable.

GOLDEN STATE DAIRY PRODUCTS

Golden State
COMPANY, LTD.
Plants Throughout California
Research Laboratories located at
425 Battery Street, San Francisco
1120 Towne Avenue, Los Angeles

A System for the

Collection of Fees

that has proved its worth

Our bookkeeper fails to find your account settled on our books. Please help him out.

PAST DUE!

☞ *This Account has no doubt escaped your notice. Will you please favor us with a remittance by return mail and oblige?*

THIS ACCOUNT
IS PAST DUE.
PLEASE REMIT.

Regarding Your Past-Due Account

Our records show that several statements and reminders have been sent you regarding the enclosed statement.

If your circumstances have made it impossible for you to pay the amount due, kindly write us promptly to that effect. Our office will then endeavor to extend all possible courtesies.

You appreciate, we are sure, that physicians, like other citizens, must pay their bills promptly. They can only do so, however, when their own clients in turn pay them promptly for such professional services as may have been rendered.

A check to cover your account, which is now considerably overdue, will be appreciated.

Final Notice

In practically all businesses the custom which is generally followed with overdue accounts is to send such to a collecting agency.

Our bookkeeper has nothing in the records of the office to show when you intend to pay the enclosed account. Perhaps the previous statements and reminders may have been overlooked or ignored.

Following the rule of this office, this overdue account will be sent to the collecting agency within ten days if arrangements for its settlement are not made prior to that time.

This collection bureau method is disagreeable to us; and we believe, also to you. By promptly sending your check all this can be avoided.

When an account is sent to the collecting agency that organization takes full charge of it thereafter.

In the September, 1927, issue of California and Western Medicine, page 398, appeared an article relating to the "collection of fees." Following this publication so many orders were received by us for printing the series of gum stickers and notices, we decided to print and stock the series in large quantities.

That we were justified in this decision is evidenced by the fact that thousands of these notices have been used by the medical profession of California. They *get* results. Many users of the system have reordered the series.

You, too, can profit by using the system for your delinquent accounts. They are inexpensive and easy to use.

The prices, including postage, are:

250	$ 6.75
500	9.00
1000	13.50

THE JAMES H. BARRY COMPANY

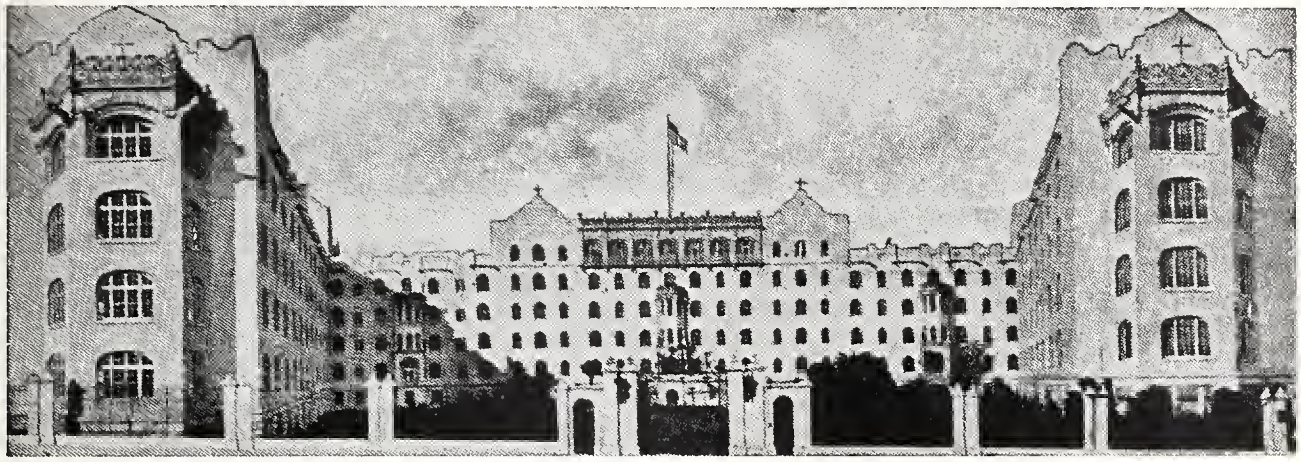
1122-24 Mission Street
SAN FRANCISCO, CALIFORNIA
[*Telephone* MArket 7900]

ST. MARY'S HOSPITAL

2200 Hayes Street
San Francisco

Conducted by Sisters of Mercy

Accredited by the American Medical Association. Open to all members of the California Medical Association. Accredited School of Nursing and Out-Patient Department.



PROFESSIONAL STAFF

Surgery
T. Edward Bailly, Ph.D., F.A.C.S., M.D.
Guido Caglieri, B.Sc., F.R.C.S., F.A.C.S., M.D.
Edward Topham, F.A.C.S., M.D.
James Eaves, M.D.
F. F. Knorp, M.D.
Hubert R. Arnold, F.A.C.S., M.D.
Edmund Butler, F.A.C.S., M.D.
Rodney A. Yoell, M.D.
T. T. Shea, M.D.

Urology
Charles P. Mathe, F.A.C.S., M.D.
George F. Oviedo, M.D.
Thomas E. Gibson, F.A.C.S., M.D.

Medicine
J. Haderie, M.D.
H. V. Hoffman, M.D.
Stephen Cleary, M.D.
A. Diepenbrock, M.D.
J. H. D. Roger, M.D.
Thomas J. Lennon, M.D.
James M. Sullivan, M.D.

Heart
Harry Spiro, M.D.

Obstetrics
Philip H. Arnot, M.D.
Charles C. Mohun, M.D.

Eye, Ear, Nose and Throat
F. J. S. Conlan, F.A.C.S., M.D.
L. A. Smith, M.D.
J J. Kingwell, M.D.
T. Stanley Burns, M.D.

Orthopedics
Thomas J. Nolan, M.D.
J. J. Loutzenheiser, M.D.

Pediatrics
Randolph G. Flood, F.A.A.P., M.D.

Neurological Surgery
Edmund J. Morrissey, M.D.

Thoracic Surgery
William B. Faulkner, Jr., M.D.

Gastroenterology
Edward Hanlon, M.D.
Frank A. Kinslow, M.D.

Neurology
Milton B. Lennon, M.D.

Dermatology
H. Morrow, M.D.
Harry E. Alderson, M.D.

Pathology
Elmer W. Smith, M.D.

Radium Therapy
Monica Donovan, M.D.

Dentistry
Thomas Morris, D.D.S.
Francis L. Meagher, D.D.S.

BOARD OF MEDICAL EXAMINERS

(Continued from Page 19)

given medicines and massages by Mrs. Barnes and of her asserted effort to sell them a piece of elephant skin described by her as 'a source and seal of power' for $500." (Los Angeles *Times,* June 1, 1933.)

"As an aftermath of his plea of guilty to charges of technical violation of the narcotic law a year ago, Dr. F. A. Bonaventura faces deportation to Italy, it was learned yesterday when the local physician was taken into custody by Immigration officials. Doctor Bonaventura secured his release in San Francisco last night by posting $1,000 bail. Failure to properly record pills containing narcotics that he had given a patient in his office in Columbus, Ohio, where he resided before coming to Santa Rosa two years ago, led to his arrest and prosecution. He returned to Columbus a year ago, pleaded guilty to the charge, and was given a fine and probation. . . . " (Santa Rosa *Press-Democrat,* May 23, 1933.) (Previous entries, April, 1931; June and July, 1932.)

"Accused of marring permanently the face of Mrs. June Fossett of 1933 North Bronson Avenue, Jean de Desley, also known as Jean Ferguson, beauty operator, was found guilty of violating the State Medical Practice Act by a jury in Municipal Judge Crumm's court yesterday. Hearing on a motion for a new trial was set for the 14th inst. Mrs. Fossett told the jury that she agreed to pay Mrs. de Desley $450 for a 'French face rejuvenation treatment' after the latter told her it would 'take from fifteen to twenty years off your face and give you a baby-like complexion.' The treatment was administered in her own home February 5 last, Mrs. Fossett said. Dr. Robert B. Griffith, who treated her, said her face showed third degree burns, apparently made by carbolic acid" (Los Angeles *Times,* June 10, 1933). The record shows that on June 14, 1933, motion for new trial was denied, and she was sentenced to pay a fine of $600 or in default thereof to serve three hundred days in the city jail. She paid the fine. (Previous entries, September, 1926; January, 1927; June, 1933.)

"Charles Caplinger, 48-year-old elevator operator, accused of practicing medicine without a license, was arrested last night by J. W. Davidson, investigator for the State Board of Medical Examiners. Davidson alleged that Caplinger varied elevator engineering with weight removing and had built up a considerable clientele among women" (San Francisco *Examiner.* May 27, 1933). Reports relate that Caplinger operated an elevator in a large downtown San Francisco hotel and maintained an office uptown. On June 8 he entered a plea of guilty to a violation of the Medical Practice Act and was sentenced by Municipal Judge Schonfeld to 180 days in the county jail, sentence suspended on condition that he no further violate the provisions of the Medical Practice Act. His attorney stated that Caplinger had sold his equipment and hereafter would attend strictly to his elevator.

Reports relate that on June 12, 1933, Frank J. C. Miller pleaded guilty to a violation of the State Medical Practice Act in the Municipal Court of Los Angeles and was sentenced to serve 180 days in the city jail. His specialty was said to have been impressing the public with his importance by displaying photographs, newspaper clippings and business cards, the latter announcing him to be "Dr. Frank J. C. Miller, bone surgeon and x-raying." He is also said to have pending against him a petty theft charge preferred by

(Continued on Next Page)

APPROVED CLINICAL PATHOLOGISTS

American Medical Association Essentials for An Approved Clinical Pathologist

An approved clinical pathologist should be a licensed graduate of medicine. He shall have specialized in clinical pathology, bacteriology, pathology, chemistry, and other allied subjects for at least three years, and he should be reasonably familiar with the manifestations of disease in the body. The director of a clinical laboratory shall be on full time or have definite hours of attendance, devoting the major part of his time to this specialty. A clinical laboratory is an institution organized for the practical application of the fundamental sciences by the use of specialized apparatus, equipment and methods, for the purpose of ascertaining the presence, nature, source, and progress of disease in the human body.

The following Clinical Pathologists directing private laboratories in California are approved by the Council on Medical Education and Hospitals of the American Medical Association:

Clinical Laboratory of Drs. W. V. Brem, A. H. Zeiler, Roy W. Hammack and G. D. Maner, Pacific Mutual Building, Los Angeles, California.

Zera E. Bolin, M. D., 450 Sutter Street, San Francisco, California.

These laboratories use standard methods and are fully equipped to make all clinical examinations of recognized value in: **Tissue Pathology, Bacteriology, Hematology, Serology, Bio-Chemistry, Kolmer Wassermanns, Kahn test, Medico-legal, Basal metabolism, Blood chemistry, Hormone Test for Pregnancy, Parasitology, Cardiology, Autogenous vaccines, etc.**

Mailing containers sent on request. Special delivery postage insures prompt, accurate service.

BOARD OF MEDICAL EXAMINERS

(Continued from Preceding Page)

one of his women victims, based on the fact that Miller was alleged to have obtained possession of a check for $141, which his victim had "saved to buy her trousseau" and which Miller is said to have used as a down payment on a new car which was adorned by a "physician" sign.

The records showed that on May 25 J. C. Cowle paid a fine of $25 in the Municipal Court of Los Angeles, imposed for contempt of court, because of his failure to appear at the hour set for jury trial on a charge of violation of the Medical Practice Act. (Previous entries, July and September, 1929; October, 1931; May and November, 1932.)

It is reported that on June 2, 1933, Jeannette Gray, mentioned in "News Items" of June, 1933, paid a fine of $100, imposed on May 5 for violation of the Medical Practice Act, her appeal having been dismissed.

Special Agent Carter reports a warrant has been issued in Imperial County, charging John W. Ramsey with violation of the Medical Practice Act. John W. Ramsey was featured in the San Francisco *Examiner* of April 15, 1926, because of his sudden disappearance from a well-known San Francisco hospital, where he had been resident physician, it being stated that he had purchased an expensive automobile and anticipated a trip to Oregon. "Colleagues upon the hospital staff are said to have entrusted Doctor Ramsey with sums of money aggregating some $6,000 during recent months. These men and the automobile company are making yesterday's inquiries," said the news item. (Previous entries, June, 1926.) Thorough investigation fails to indicate this man's medical credentials.

The record shows that Mrs. Jessie Rew on June 8 in the Municipal Court of Los Angeles pleaded guilty to a violation of the Medical Practice Act and on June 15 was sentenced to pay a fine of $600 and serve 180 days in the city jail, whereupon the defendant was committed to jail. It is related that the committing magistrate made the statement in court that he was sorry the penalty could not be more severe. Reports relate that on February 18 of this year Mrs. Rew attempted an abortion. Her procedure is alleged to have resulted in the death of her patient from peritonitis on February 19 in the county hospital, although the autopsy showed that the patient was not pregnant nor had she ever been.

Henri La Rue, also known as H. J. Wells, mentioned in June "News Items," was on May 18, 1933, found guilty by a jury in the Municipal Court of Los Angeles and sentenced to 180 days under the name of La Rue, and 180 days under the name of H. J. Wells.

Merck Exhibit at Chicago Fair.—According to figures just completed, over eight thousand persons viewed in a single day the Merck exhibit at the Chicago Fair. The popularity of the chemical display is an indication of the growing interest of the public in scientific matters.

Located on the ground floor of the Hall of Science, the exhibit of Merck & Company, Inc., depicts the progress made in chemistry during the past century. It is situated between the chemical group in which the display of Union Carbide and Chemical Company is outstanding and the purely medical group.

A Limited Number of
Very Desirable Suites
Facing Union Square
Are Now Available

Exclusively for
Physicians ◆ Surgeons
Dentists

▼

Union Square Building
350 Post Street
GArfield 1014

Attracting most attention in the Merck exhibit is the nososcope, a stereopticon through which can be seen something of the history and progress of diseases. It briefly depicts the constant battle being waged by science against disease. By actual count, ninety-nine persons used the nososcope in ten minutes.

A pharmacy desk with a professional pharmacist in attendance is likewise attracting considerable attention. In the presence of the onlookers the pharmacist demonstrates the art of his profession in the preparation of pills, the weighing of very small quantities of powders, the filling of capsules, and the preparation of other types of pharmaceutical products required in prescriptions.

Nine-foot prisms of plate glass, which typify the mass of chemicals that are used today in science and industry, form a part of the outside wall of the exhibit. Selected for their brilliance and color they attract considerable attention.

Adjacent to the Diorama are cut-out pictures of an ancient pharmacy of the seventeenth century and the old factory of the Powers & Weightman Company built in the early 1850's at the East Falls of the Schuylkill near Philadelphia.

These three representations illustrate the marked advance in the buildings and equipment of chemical plants in the last hundred or two years.

Along the west wall stands a museum case containing interesting relics of 250 years of pharmacy and chemistry in the service of Merck & Company, Inc., and their predecessors.

Flanking the museum case are, to the north, displayed a part of the group of rare alkaloids which are made in the company's factories, drugs essential to the practice of medicine and useful in the arts. On the south an arrangement of trade packages of narcotic drugs, derivatives of opium and coca leaves with models of characteristic types of opium—Turkish, Yugoslavian, and Persian. In conformance with the Federal Narcotic Law the models of opium are fabricated to resemble the genuine crude opium. The trade packages are shown without contents.

The shelves of bottled chemicals on the east and north sides of the exhibit are representative of the extensive line of chemical products manufactured and sold by Merck. Nearly nine hundred different forms and kinds of chemicals make up this display, yet leave many to be accounted for in the alkaloid and the narcotic cases and still greater numbers which, because of their nature, do not lend themselves to exhibition.

Research in Control of Smallpox.—Difficulty is often experienced in making a correct diagnosis of smallpox and the absence of any laboratory test which could clinch a diagnosis has always been a severe handicap in dealing with this disease.

Research workers in England have now discovered a new test for the diagnosis of smallpox, and the results of their work and a description of their methods have been published by the British Medical Research Council, under the titles of "Diagnostic Value of the 'Vaccinia Variola' Flocculation Test" and "Further Investigations on the Variola-Vaccinia Flocculation Reaction."

The Rationale of the Vaccinia Flocculation Test.—The rationale of this test as used for the diagnosis of smallpox is based on the view that the virus of vaccinia (cowpox) is essentially the same as that of smallpox. The test is performed by adding to the serum of a rabbit which has been vaccinated, an extract of the crusts of the smallpox patient, when a floccular precipitate forms an incubation. The test is specific. Crusts from chicken-pox and other skin disease do not show any floccular precipitate. The floccules are formed by the union of the antigen (small-

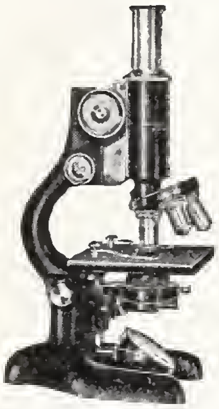
(Continued on Next Page)

Ten Acres of Beautiful Grounds

COMPTON SANITARIUM and LAS CAMPANAS HOSPITAL
COMPTON, CALIF.

30 minutes from Los Angeles. 130 beds for neuropsychiatric patients. 40 beds for medical-surgical patients. Clinical studies by experienced psychiatrists. X-ray and clinical laboratories. Hydrotherapy. Occupational therapy. Ten acres landscaped garden. Tennis. Baseball. Motion pictures. Scientifically sound-proofed rooms for psychotic patients. Accommodations ranging from ward beds to private cottages.

GLENN MYERS, M. D., *Medical Director*
Philip J. Cunnane, M. D. G. Creswell Burns, M. D.
Helen Rislow Burns, M. D.
Office: 1052 West 6th Street, Los Angeles



THE NEW FFS-8 PHYSICIAN'S MICROSCOPE

with Rack and Pinion Substage and Divisible Abbe Condenser with 16 mm., 4 mm. and 1.9 mm. Oil Immersion Objectives, 2 Eyepieces and triple revolving Nosepiece. Complete in hardwood carrying case.

$120.00

BAUSCH & LOMB OPTICAL CO.
OF CALIFORNIA
28 GEARY STREET **SAN FRANCISCO, CALIF.**

(Continued from Preceding Page)

pox virus) with the antibodies in the serum of the vaccinated rabbit, and the test is thus comparable with the serological tests used in the diagnosis of other diseases. The preface to the first report sums up the advantages such a test will give in controlling smallpox in the following words:

"It is obvious that for the successful control of infectious disease early and accurate diagnosis has paramount importance. When an early case of smallpox is mistaken for chicken-pox the consequences may be disastrous, as more than one recent incident has shown. In a population like our own, which is incompletely immunized by vaccination against smallpox, an efficient system of notification becomes a preventive measure of incalculable importance. Efficient notification is impossible without early and accurate diagnosis. It is in the aid that it gives to this that the present report upon the practical use of flocculation tests will have its importance for preventive medicine."

The second report published gives further technical details about the methods of performing the diagnostic test. Further valuable information has, however, been obtained, which the Medical Research Council justifiably claims as "breaking new ground in the study of immunity against smallpox." The second report deals with (1) the action of antivaccinia serum upon vaccinia virus *in vitro;* (2) the use of antivaccinia serum in giving passive protection against infection; and (3) the production of immunity by the administration of vaccinia virus exposed to antivaccinia serum.

The Action of Antivaccinia Serum Upon Vaccinia Virus in Vitro.—The experiments of the investigators showed that immune sera, when mixed with vaccine virus, inactivate the latter. Vaccine which had been mixed with immune serum, when inoculated into the skin of a susceptible animal, had no effect. Having demonstrated that immune sera obtained from a vaccinated animal could neutralize the virus in a test tube, the next step was to try if the immune sera injected into an animal could protect it against inoculation with vaccinia virus.

Flocculating Serum Produces Passive Immunity.—Animals receiving a protective inoculation with flocculating serum were found immune to infection by vaccinia when introduced into the skin, into an organ, or into a vein. This experiment suggests that it may eventually be possible to passively immunize contacts of smallpox against the disease. The great value of this procedure will be seen when the following facts are considered: Frequently a smallpox case is not detected or diagnosed for several days after the onset of the disease. If a smallpox contact is vaccinated in the first three days after exposure to infection, he can be protected against the disease. This is because the incubation period of vaccinia is shorter than that of smallpox, and the vaccination, therefore, "takes" and the contact becomes immune before smallpox has time to develop. After a period of three days, however, it is too late to protect the contact against smallpox by vaccinating him. There is now hope that contacts who have been exposed to infection for more than three days can be passively protected by an injection of flocculating serum. This procedure, if found successful in practice, would result in saving many lives, and, as it would prevent the development of new cases, each case being a possible source of infection for a crop of new cases, it would also be a valuable means of limiting the spread of the disease.

If passive immunity can be given by a dose of flocculating serum, there seems reason to believe that human serum obtained from a recently successfully vaccinated human being would be similarly effective. In the treatment of cases of smallpox it would also be worth trying the effect of doses of immune human serum obtained from a donor who had been recently and successfully vaccinated.

Production of Immunity with Vaccinia Sensitized by Exposure to Flocculating Serum. — A very important

LIVERMORE SANITARIUM

The Hydropathic Department devoted to the treatment of general diseases excluding surgical and acute infectious cases. Special attention given functional and organic nervous diseases. A well equipped clinical laboratory and modern X-ray Department are in use for diagnosis.

The Cottage Department (for mental patients) has its own facilities for hydropathic and other treatments. It consists of small cottages with homelike surroundings, permitting the segregation of patients in accordance with the type of psychosis. Also bungalows for individual patients, offering the highest class of accommodation with privacy and comfort.

GENERAL FEATURES

1. Climatic advantages not excelled in United States. Beautiful grounds and attractive surrounding country.
2. Indoor and outdoor gymnastics under the charge of an athletic director. An excellent Occupational Department.
3. A resident medical staff. A large and well trained nursing staff so that each patient is given careful individual attention.

Information and circulars upon request
Address: CLIFFORD W. MACK, M. D.
Medical Director
LIVERMORE, CALIFORNIA
Telephone 7-J

CITY OFFICES:

SAN FRANCISCO
450 Sutter Street
DAvenport 3523

OAKLAND
1624 Franklin Street
GLencourt 5989

result of the research work was the discovery that vaccinia virus sensitized by exposure to flocculating serum can give, on inoculation, a high degree of immunity although it does not produce skin lesions. Thus it seems possible that in the not distant future this method of vaccination may be successfully introduced. Much of the popular antagonism to vaccination is caused by the marked inflammatory skin reaction which results from the present method of vaccination by scarification. Though the discomfort of a swollen and painful arm is a small and necessary price to pay for immunity from such a dread disease as smallpox, nevertheless a method which can give immunity without giving rise to skin lesions is to be welcomed.

General Conclusions.—1. Investigation of material from cases of variola major, variola minor, vaccinia from man and other animals, and from other conditions, corroborates unequivocally that "the variola-vaccinia flocculation" reaction is specific, and is of considerable diagnostic value.

2. Immune flocculation serum of high titre definitely confers passive immunity, and in some instances the activity of such sera in this respect is so great that one cubic centimeter of serum per kilogram of body weight may protect against a very large multiple of the minimum infecting dose administered intradermally, by scarification, or even by the intratesticular route.

3. Virus "sensitized" by exposure to flocculating serum, although devoid of dermal infectivity, will, when administered subcutaneously to rabbits (average weight two kilograms) in doses corresponding to 0.001 gram of dried lapine, confer solid immunity.

Standards for Surgical Pathologists in New York State.—Some seventeen years ago a system was inaugurated in New York State of issuing certificates of approval to those laboratories that conform to the minimum standards established by the Public Health Council. During the period that has ensued, the quality of the bacteriologic and serologic work has greatly improved, standards have been gradually advanced, and the development of laboratory service throughout the state has been stimulated to a remarkable degree. . . .

The Public Health Council has established the following requirements for persons in charge of laboratories which receive approval (other than those which restrict their services to the sanitary examination of milk and water samples only):

Preliminary qualifications. All directors of laboratories, surgical pathologists and bacteriologists in charge of laboratories shall possess the integrity and ability to conduct a laboratory in which satisfactory standards of work can be maintained; directors of laboratories and surgical pathologists shall be graduates of medicine of schools recognized by the regents of the University of the State of New York and licensed to practice medicine or eligible for examination for license to practice medicine in the state of New York; and bacteriologists in charge of laboratories shall possess the educational requirements for a doctorate degree in science, public health or medicine as prescribed by a university holding membership in the Association of American Universities.

Director. The qualifications shall include an adequate knowledge of pathology and bacteriology and, subsequent to graduation, at least four years' training and experience in pathological and bacteriological work approved by the Public Health Council.

Surgical pathologist. The qualifications shall include an adequate knowledge of pathology and, subsequent to graduation, at least four years' training and experience in pathological work, approved by the Public Health Council, of which at least one year shall have

(Continued on Next Page)

For use in the Prevention and Treatment of the Acid-Ash Type of

ACIDOSIS

California Lima Bean FLOUR!

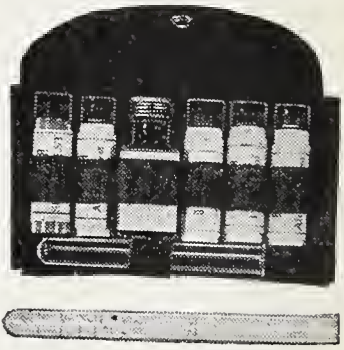
Alkalinity, of course, neutralizes *acidity*. And Limas are one of the most alkaline foods known—41.65 per 100 grams!

To meet a definite demand from the medical profession, we have developed, to a high degree of fineness, a Lima Bean FLOUR—for making non-acid breads, muffins, pancakes and waffles for Basic Diet menus!

Lima FLOUR— is available in 10-lb. bags at $1.20, and in 100-lb. bags at $10.00. Upon receipt of price and delivery instructions your order will be shipped parcel post or express collect. Send orders, and make check or money order payable to—

CALIFORNIA LIMA BEAN
GROWERS ASSOCIATION
Oxnard, California

NEW!
DUNKLER URINE TEST KIT
6 TESTS



Dunkler Urine Tests in Compact Case, including reagents for Sugar (Qual.), Albumin (Qual.), Albumin (Quant.), Acetone, Bacterial Infection, and Chronic Interstitial Nephritis with Testometer, only $5.00

All Tests Completed In One-Half To Eight Minutes

This is a scientific, tested product that will save the practitioner valuable time and money with greater accuracy in his urinary analysis. These new reagents require No Boiling, Corrosive Acids or the use of a Microscope. It is a rapid, exact, easy and scientific method for the examination of urine. The simplicity of the procedure and the reliability of the reactions will astound you. The products will not deteriorate with age or climatic changes. The cost per test is about one-half cent.

A. S. ALOE CO.
932 S. Hill St. LOS ANGELES, CAL.

(Continued from Preceding Page)

been devoted in training and experience in the diagnosis of neoplastic disease.

Bacteriologist in charge. The qualifications shall include, subsequent to graduation, at least four years' experience or training in pathology and bacteriology or in bacteriology alone, approved by the Public Health Council.

Good Food for Little Money.—Under the above caption, Lucy H. Gillett, a well-known nutritionist, has prepared for the American Child Health Association a feeding schedule that may be of special value to protect the health of children. The data in this schedule represent a revision of a similar schedule which was issued in 1931. It is simpler, shorter, and the foods mentioned can perhaps be purchased cheaper in 1932 than they could in 1931. This schedule is a handy guide in the wise and economical selection of foods for the whole family. The foods mentioned will protect health, build sound bodies, and develop resistance to disease. The following schedules suggest a week's food orders for families of various sizes:

Milk.

One quart per child per day if possible; at least a pint. A tall can of evaporated milk with an equal amount of water added is as good for children as one quart of pasteurized milk. Use it in soups, cocoa, desserts, and to drink.

Vegetables and Fruit.

Potatoes and one or more of these daily: carrots, turnips, beets, onions, cabbage, spinach, lettuce, escarole, peas, beans, or other vegetables; oranges, apples, bananas, or other fruit.

A raw vegetable, such as chopped cabbage or grated carrot, at least three or four times a week.

Oranges or tomatoes every day if possible.

Canned vegetables may be used in place of fresh vegetables when cheaper.

Bread and Cereals.

Bread and cereals, one or both at every meal. Dark or whole grain bread and cereal are best for growth; use at least once daily.

Eggs, Meat, Fish, Cheese. Dried Beans, Peas and Lentils.

One or more of these foods daily if possible.

An egg at least every other day, but never more than one egg daily. Brown eggs and white eggs are equally good.

Use meat never more than once daily.

Cottage and cream cheese may be given to young children.

A Week's Food Orders for Families of Various Sizes.

	Quantity for a Family of			
	Three	Four	Five	Six
Milk (quarts)	14	21	25	28
Tomatoes (pounds	1	2	2	3
Vegetables (pounds)	14	20	25	32
Fruits (pounds)	2	2	3	3
Bread and cereals (pounds)	10	14	17	20
Eggs (number)	6	9	12	18
Fats (pounds)	2	2	3	3
Sweets (pounds)	2	2	3	3
Meat, fish, cheese, dried beans, peas and lentils (pounds)	4	5	7	8

Camping Joys and Hazards.*—Going camping? Well, then, what about the how and when of the proposition, to say nothing of the where? You see, these are all pertinent to the fun and pleasure you will get out of your camp life, and you must give them thought beforehand if you expect to return home well pleased with your outing.

Camping is a grand way to spend your vacation. It's a lot of fun under the right conditions, and even

---

* By A. J. Bohl, Supervisor of Health Officers in "Pennsylvania's Health."

(Continued on Page 28)

● NEW SIZE

NEW 8-Ounce Convenient Size

- —Fits the present day pocketbook
- —Fits the medicine cabinet
- —Handy for travelers
- —Contents easily removed

● Eight Ounce Bottle . . . .

New Half Size at a lower price to safeguard your prescriptions. Prevents substitution.

●

Your patient deserves to be provided with Petrolagar in the original bottle. Petrolagar is the original agar and oil emulsion accepted for New and Non-official remedies by the Council on Pharmacy and Chemistry of The American Medical Association.*

It is requested that physicians write "N.N.R." on Petrolagar Prescriptions, thus assuring the quality of the product prescribed.

Petrolagar is 65 per cent (by volume) liquid petrolatum of most rigid specifications, emulsified with "Number One, Silver White, Kobe Agar-agar."

---

*The Rules of the Council were adopted with the object of protecting the medical profession and the public against fraud, undesirable secrecy and objectionable advertising in connection with proprietary medicinal articles.

●

Petrolagar Laboratories, Inc.
8134 McCormick Boulevard,
Chicago

FRENCH HOSPITAL • Geary Street and Fifth Avenue
SAN FRANCISCO, CALIFORNIA

HENRI J. BAZERQUE, *President*
V. LABRUCHERIE, *Superintendent*
ALBERT AUBERT, *Secretary*
ELSIE E. MITCHELL, R. N., *Supt., School of Nursing*

A general hospital of 225 beds operating an accredited school of nursing, admitting all classes of patients except those suffering from mental diseases. Organized in 1851 and is operated by the French Mutual Benevolent Society, through a Board of Directors, a chief executive officer and staff. Accredited for intern training by the American Medical Association and approved by the American College of Surgeons

MEDICAL STAFF

Medicine
A. N. FREGEAU, M. D., Chief
E. S. KILGORE, M. D., Consultant in General Medicine
THOMAS G. INMAN, M. D., Consultant in Neuropsychiatry
MARK GERSTLE, JR., M. D., Consultant in Neurology
ERNEST D. CHIPMAN, M. D., Consultant in Dermatology
JAY JACOBS, M. D., Consultant in Dermatology
CABOT BROWN, M. D., Consultant in Lung Diseases

Urology
A. H. McNULTY, M. D.
ALVIN E. CERF, M. D.
SAMUEL A. GOLDMAN, M. D.

Radiology
LLOYD B. CROW, M. D.

Surgery
ASA W. COLLINS, M. D., F.A.C.S., Chief
HAROLD M. GILFILLAN, M. D., Assistant
CARL L. HOAG, M.D., F.A.C.S., Associate
E. B. TOWNE, M. D., Consultant in Neurological Surgery
EDMUND J. MORRISSEY, M. D., Consultant in Neurological Surgery
GEORGE WARREN PIERCE, M. D., Consultant in Plastic Surgery
W. L. ROGERS, M.D., Consultant in Lung Surgery

House-Visiting Department
COLEMAN A. BLOCK, M. D.
LOUIS D. RONCOVIERI, M. D.

Pediatrics
BRADFORD F. DEARING, M. D.

Anesthesia
HERMAN MARCUS, M. D., Chief
ELLIS D. HARMON, M. D.

Orthopedics
ALFRED RONCOVIERI, M. D.
FRANK A. LOWE, M. D.
RALPH SOTO-HALL, M. D., Consultant

Ophthalmology and Oto-Laryngology
E. C. FABRE-RAJOTTE, M.D., Chief
VICTOR D'ERCOLE, M. D., Assistant

Obstetrics and Gynecology
W. J. HAWKINS, M. D., F. A. C. S.
R. F. GRANT, M. D.
J. K. PLINCZ, M. D.
CHESTER L. COOLEY, M. D.

Pathology
MARION H. LIPPMAN, M.D., Director Clinical and Pathological Laboratory
DAVID A. WOOD, M.D., Pathologist

(Continued from Page 26)

under the wrong ones. You get a change of scene, go back to nature, sort of revert to the primitive; and that attracts most of us. We're all more or less savages at heart, and life where silver and linen on the table are taboo, where food is without frills, where the luxuries of home life are lacking, has lots of appeal, for a while.

You know how it is when night falls; there is no noise of automobile and trolley, no hum of city life, nothing but the faint night sounds of the outdoors. There is a big camp fire in which to gaze and dream life's stern realities away, there is a big orange moon ducking in and out of the clouds, a cool breeze blowing, and first thing you know you're ready for bed. And how you can sleep!

No tub next morning, but a plunge into the cold waters of lake or river, a quick rubdown, and breakfast. And a camp breakfast is something, a good one, I mean. When the toast and hot cakes and eggs are just right, and coffee strong and fragrant. Man, that's real living! The sun shining in at the door, or tracing shadows on your tent, and scent of wood smoke, and forest, and good pipe tobacco, all blended into a heady elixir that puts you right up among the gods. No fooling, camping is great fun.

It is not always so pleasant, of course. There are some rainy days, some days when nothing is in tune, but it all comes right next morning or the morning after, and everybody is happy again. Heigh ho for summer and camping!

There are all sorts of camps, from the big and more or less well managed Boy or Girl Scout or "Y" Camp to the pup tent outfit. The big camp has a purpose besides just fun, for it has counsellors, leaders, who strive to do something in the way of character building and betterment of physical health and strength. In such a camp as that, there is no doubt but that your child, or yourself for that matter, will get good food in adequate amounts, plenty of sleep and exercise, some training in sports, and something in the way of discipline, and so far as these go, the fundamental purpose of the summer camp—health building—is fulfilled.

But, regardless of the equipment of such a camp, regardless of the physical training of the camper, there are more important things than these. And these are the things that must be thought of before that boy or girl is packed off to camp, namely, safety and health protection.

It is nice to go to camp and learn to swim well but, while your child is learning, what of his safety? Is he going to come home proud of his immature crawl stroke, or is he going to be drowned because of inadequate overseeing? Is he going to be allowed to drink impure water, and thereby pick up an attack of typhoid fever, or perhaps suffer from the same disease through the presence of a "Typhoid Mary" somewhere in the cook house personnel? Is he going to camp in some isolated spot, perhaps a perfect natural Paradise, but entirely too far away from medical or hospital attention should some unforeseen accident occur? Is there going to be a safe or pasteurized milk supply, or is the camp going to live off the nearby countryside, in which the milk supply may be everything but safe? Is there going to be any standard of health required of the prospective campers, or can just anybody go?

Suppose you go up to camp yourself, with your son, or perhaps a few days before. The camp director will show you around, show you the substantial construction of the dining pavilion and cook house, the sleeping tents, and comment on the quality of the food to be served. All very well, but you look for screens. There will be flies, there are flies everywhere, and there is no filthier animal in the world than a fly and none more likely to carry disease. And is the garbage kept in tightly covered metal cans, or in leaky wooden containers? Is it hauled away from camp and properly disposed of, or is it dumped over

QUALITY SERVICE DEPENDABILITY

DIEDERICH OPTICAL COMPANY, INC.
WHOLESALE AND MANUFACTURING OPTICIANS

OCULISTS' PRESCRIPTIONS FILLED

The prescription service we offer is backed by our name, which has been attained by doing high grade work for many years.

649 SOUTH OLIVE STREET LOS ANGELES, CALIFORNIA

the surface of the ground in a nearby ravine or wood to provide a fly breeding place?

Next, where does the water supply come from? Is it a spring somewhere in the neighborhood, or a well right on the grounds? Both of them may very well be perfectly safe, of course, but the spring should be covered, so that no one can dip a cup or pail into it. It should be completely enclosed in a tight concrete box, with an overflow pipe by means of which a pail may be filled, and it should not be possible for rain water or surface drainage to enter it, or even wash over and around it. Banking or ditching will usually take care of that. And it is the same with a well. There should be a good tight concrete cover, a pump, and a trough to carry the drip away from the well. And there should not be, at well or spring, a tin cup or other drinking vessel for all and sundry to use.

There will be toilet facilities, naturally, and you should make an inspection here. It is not likely that there are any sewers, so the ordinary outdoor convenience will be provided. It should be kept sanitary and clean, inside and out, and you will probably find no fault with it. It should not be located anywhere near the water supply, it should be of flytight construction with covered seats, and lime or disinfectants should be used freely. Disinfectants are of doubtful value here, but they help to keep down odors, and their use assures cleansing and scrubbing.

And check up a bit on the kitchen equipment, the cupboards and ice box, and on the health of the cooks and the rest of the kitchen force. They are all food handlers, you know, and every one of them must have a medical inspection certificate.

Check up a bit, too, on the sports end of the camp. There may be a physical director who is an exceptionally good swimmer, and his slant on sports will be water sports. Naturally it would be, but your boy may have a hankering for basketball or baseball and not care a bit for swimming. And your boy ought to have some say about what he is going to do.

Above all, see that there is a medical director or available medical assistant. A bad fall may result in a broken limb, or a concussion of the brain. There are such things as poisonous snakes, and there are wounds from knives and tools, and hot coals to step on, and water to fall into. Any of these may result in sickness or severe injury, and your boy is entitled to prompt and efficient medical service in case of an accident.

All of these things, and many more, apply to the big camp, and they also apply to your private camp to which your family goes for the summer. There everything is up to you, and you cannot afford to take a chance. Particularly, check up on your water supply. If it is not right, and if you cannot make it right, then move your camp. It does not pay to take a chance on an open spring or on water from a stream in inhabited country. Usually they just cannot be safe, and your summer's fun means very little if it results in sickness or death. Be sure that you have a complete first-aid kit, and be sure that it is used when necessary. Iodin doesn't mean anything in the bottle; its useful place is on that cut finger.

And remember, it is never smart to take a chance. Risks are poor things to take while you are driving in your car to or from camp. Drive carefully, for you have a full load of passengers and equipment. Also, make it a rule that no one goes swimming or canoeing alone. Cramps can strike like lightning, canoes are easily upset, and you know what happens when there is no help.

Think of all these things beforehand, before it is too late. Forewarned is forearmed. And by the way, don't forget that sunburn lotion; better still, respect the power of sunrays and avoid the necessity for its use. Now then, all aboard. And I certainly hope you will have a fine time.

The Economic Situation and Child Health.—The harmful effects of the present economic situation upon child health are becoming increasingly evident despite the fact that mortality rates continue to be low.

Ella Oppenheimer, M. D., of the Children's Bureau, United States Department of Labor, in an address given before the Conference of the National Federation of Day Nurseries, New York City, and published in the *Child Health Bulletin*, May, 1933, states that, although many forces have been at work to counteract the effects of inadequate or barely adequate family living budgets, it is apparent from reports of physicians, health centers and other similar agencies throughout the country that the problem of conserving child health is a very real one.

Physicians in charge of children's hospitals and clinics find that many children are showing increasingly the results of excessive carbohydrate feeding. They say it is futile to talk to parents about building up children with good food, fresh air, and rest when the food budget is absolutely limited with no extra relief in sight, homes are overcrowded and in winter inadequately heated.

From scattered places where reasonably comparable records of examinations of similar groups of children over a period of years have been tabulated and analyzed, changes in the physical condition of certain groups of children have become evident, especially in 1932. A striking increase in malnutrition (based on diagnosis by physicians) among preschool and older children as well is reported from health centers in several of the large cities. The health officer of an industrial city of 61,000 reports an increase of about 29 per cent in the proportion of children more than 10 per cent underweight in the fall of 1932, as compared with previous years. In one large city an analysis of possible causal factors among groups of malnourished children revealed poverty as an increasingly progressive one since 1929; in another, one-third of the malnutrition in a group of children was thought to be closely related to the present economic depression. In one of the cities referred to the increasing numbers of

(Continued on Next Page)

CALSO WATER

Palatable ALKALINE *Sparkling*

NOT A LAXATIVE

Calso Water: An efficient method of supplying the normal ALKALINE SALTS for counteracting ACIDOSIS.

Calso Water: Made of distilled water and the ALKALINE SALTS (C. P.) normally present in the healthy body.

Calso Water: Counteracts and prevents ACIDOSIS, maintains the ALKALINE RESERVE.

●

The Calso Company

524 Gough Street
San Francisco

Transportation Bldg.
Los Angeles

A FEW
CHOICE
LOCATIONS
AVAILABLE

AT A
REDUCED
RENTAL
SCHEDULE

APPLY TO
CHAS. W. SMITH
BUILDING MANAGER
ROOM 415 450 SUTTER STREET
Telephone GARFIELD 7221

FOUR FIFTY SUTTER

(Continued from Preceding Page)

school children who in recent years have failed to have major physical defects corrected is another indication of what is happening.

Reports from directors of maternity and child hygiene work in two northern states of defects found in the examinations of rural and semi-rural preschool children during the past four or five years also seem significant. In one state a striking increase in the percentage of total defects, active rickets, glandular enlargement, and abnormal tonsils were found among approximately five thousand children examined in 1932 as compared with 1929, and 1930 or 1931. It is interesting that there has been an actual decrease in the incidence of underweight among these children. The latter, Doctor Oppenheimer points out, probably is an expression not of an actual decrease in malnutrition, but in view of the other physical findings, an indication of what we know may be an effect of the unbalanced, the qualitatively inadequate, usually excessive starch diets so common among those with very small and insufficient food budgets. It is probably also an indication of what many have felt, namely, that the statement that there has been no increase in the proportion of underweight children is not necessarily valid. Children may be clinically malnourished though within or above the so-called normal weight zone. The other state reported that the percentage of nutritional defects found in its well-child conference examinations of preschool children ranged from 11 to 14 per cent in 1927, 1928, 1929, and 1930, as compared with 19 per cent in 1931 and 1932.

Mental and emotional effects upon children of stress and strain in the home—in many cases leading to the actual breakdown of family life—are also apparent.—*Ohio Health News.*

Many Factors Involved in Assuring Milk Safety.—Many essential requirements are to be met before there can be assurance of a safe and satisfactory milk supply. The list appended hereto could be materially lengthened if rules for the housewife, in safeguarding her domestic milk supply, were added, but from the standpoint of the public health the following, as laid down by Rosenau, should be found ample for any normal situation:

1. Cows should be healthy and free especially from infections, or any febrile disease or inflammatory condition of the udder.

2. All persons who in any way come in contact with the milk or milk apparatus should be free from communicable diseases and not be carriers. A minimum of human contact should be insisted on.

3. Milking should be done in clean rooms, the udders having been washed; hands of the milker should be clean and dry.

4. The milk should be received into clean, sterilized pails with small mouths so as to keep out the dust and dirt which falls from the udder and belly of the cow. If strainers are used they should be cleaned and boiled morning and evening. Cans and pails should be cleaned with washing soda or alkaline powder (not soap), rinsed in clean water and then steamed or boiled.

5. Milk should be chilled to 50 degrees Fahrenheit or under at once, and kept protected from flies, dust, odors and other contamination in a clean milk house until collected. A wooden paddle should not be used to stir the milk. If stirred, a metal paddle is preferable.

6. Milk in transit also should be kept protected and cold, at a temperature not higher than 50 degrees Fahrenheit, and guarded against tampering en route. The lower the temperature the easier it is to keep down the bacterial count.

7. All apparatus at the city dairy, such as tanks, clarifiers, separators, pasteurizers, and bottling machines, should be kept scrupulously clean and sterilized daily with steam.

Why Advertising Pays

THE official State Medical Journal is read by physicians in active practice. They are the doctors who buy products and prescribe them for their patients.

The State Medical Journal is jointly owned by its readers. They have a personal interest in patronizing their own advertisers.

The Journal intensively covers its own field. It is believed to have more paid circulation there than any five Journals of general circulation.

It confines its circulation to a limited field. Its editorials and news pertain to that territory. It is full of reader interest.

All advertising is carefully edited. Questionable advertising is excluded. Readers know the advertising pages are trustworthy. Ethical advertisers are solicited.

8. Pasteurization at 142 to 145 degrees Fahrenheit for not less than thirty minutes should be followed by rapid chilling and the milk should be kept below 50 degrees Fahrenheit until delivered to the consumer. Milk and cream used for making milk products also should be pasteurized. The need here is as great as for milk itself.

9. Pasteurized milk should be bottled by machinery in sterilized bottles, well sealed, and delivered promptly to the consumer.

10. All bottles and cans, after use in city delivery, should be washed and sterilized before being returned to the producer, to prevent the conveyance of infection to the dairy or farm.

11. The milk must be graded. In this way the producer is paid for care and cleanliness and the consumer has ready means of knowing the sanitary character and nutritive value of the milk he buys. The health officer should make frequent bacterial counts and sanitary surveys for the purpose of grading.

12. A sanitary code based on good milk laws (which include milk products) should be enforced.

13. A system of licensure, inspection and education to assure these requirements should be followed.—*New England Journal of Medicine (Boston).*

Increase in Diabetes.—Based on the death rates for the respective years, it is to be noted that in 1930 there was expectation that 15 out of every 1,000 white males and 27 out of every 1,000 females born would ultimately die of diabetes, compared with 13 males and 18 females, per 1,000 born, in 1920. Thus, according to a recent *Statistical Bulletin* of the Metropolitan Life Insurance Company, this probability has increased nearly one-sixth for males and exactly one-half for females. In this aspect, the editor points out that diabetes today presents a serious and growing public health problem.

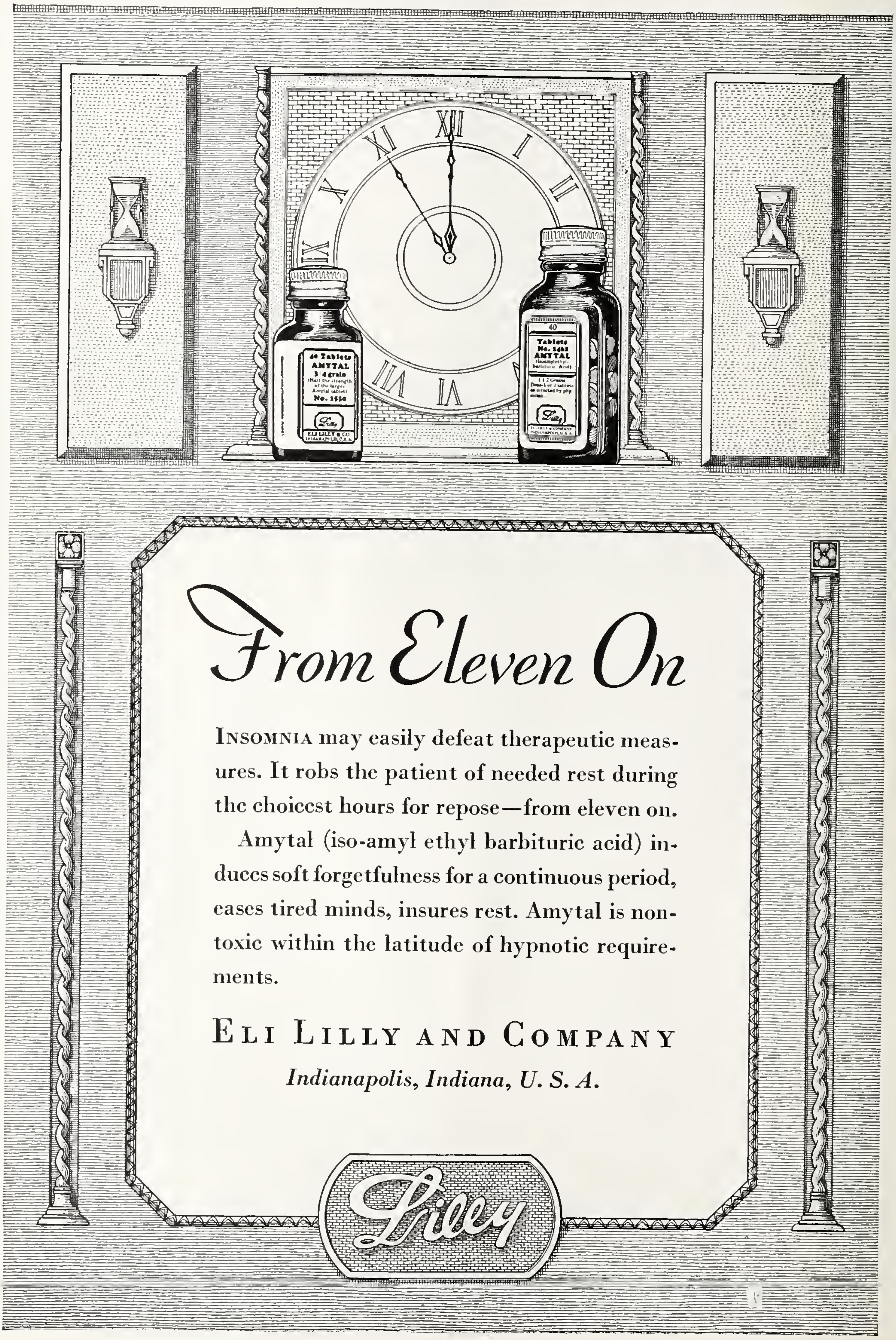
Considered by age groups among white males, it is noted that the probability of dying from this disease increases sharply from birth to age five, and from there on increases very slowly. In 1930, the maximum probability for males was reached about age 55, at which close to 18 in every 1,000 living would be expected to die eventually from diabetes if the 1930 rates continued to prevail. Probabilities for males on the basis of the 1930 rates are consistently higher at every age than in 1920.

Among females, where the increase is greatest and the disease is causing gravest concern, there is an abrupt increase of probable fatal termination between birth and age five. Thereafter, the probability increases slowly with age, as among males, but reaches its maximum about age 50 when, if the 1930 rates continued to prevail, 31 out of every 1,000 women may be expected to die eventually from diabetes. After 50, probability declines at first slowly, but then sharply, so that, at age 80, the probability is only 10 in 1,000. Based on the 1930 death rates, these probabilities are almost consistently 50 per cent higher than those based on the 1920 mortality rates.

As compared with the probability of dying ultimately from tuberculosis, that from diabetes, at all ages past thirty, is much greater. On the basis of 1920 mortality, the two probability curves for women did not cross until age 60. The situation is different among men. Based on the 1930 rates, there was little difference in probability until age 60, but in 1920 the two lines did not cross until age 80.

There has been unquestionable improvement in diabetes treatment methods; but there has occurred simultaneously a marked increase in the number of deaths. The only logical conclusion is that many more cases than in the past are occurring now. It is a twofold increase in incidence. On the one hand, recognition of cases has grown rapidly through expansion of medi-

(Continued on Page 34)



From Eleven On

Insomnia may easily defeat therapeutic measures. It robs the patient of needed rest during the choicest hours for repose—from eleven on.

Amytal (iso-amyl ethyl barbituric acid) induces soft forgetfulness for a continuous period, eases tired minds, insures rest. Amytal is non-toxic within the latitude of hypnotic requirements.

Eli Lilly and Company

Indianapolis, Indiana, U. S. A.

CALIFORNIA
AND
WESTERN MEDICINE

Owned and Published Monthly by the California Medical Association
FOUR FIFTY SUTTER, ROOM 2004, SAN FRANCISCO
ACCREDITED REPRESENTATIVE OF THE CALIFORNIA AND NEVADA MEDICAL ASSOCIATIONS

VOLUME XXXIX JULY, 1933 No. 1

ALAMEDA COUNTY PLAN*

A PLAN FOR THE CARE OF INDIGENT AND PART-PAY PATIENTS, AND FOR A MUTUAL, NONPROFIT HOSPITAL SERVICE

By GEORGE G. REINLE, M. D.
Oakland

DISCUSSION *by R. G. Leland, M.D., Chicago, Illinois.*

ONE of the foremost topics of study and discussion today is the sociologic and economic aspect of the cost of providing adequate, efficient, and satisfactory medical care to persons of moderate income.

BASIC OBJECTS OF THE ALAMEDA PLAN

Therefore the Alameda County Medical Association undertook the study and development of a plan which it was believed would solve the problem of medical care and hospitalization for:

1. The indigent;
2. The individual of moderate means; and
3. Those who can properly finance all their medical problems to the entire satisfaction of the medical profession, the hospital, and the community.

Preventive medicine is left to the properly constituted health authorities: federal, state, and municipal.

In developing their plan, the members of the Alameda County Medical Association have been mindful of:

(*a*) The undesirable schemes of the commercial organizations which render medical and hospital service for profit;

(*b*) The necessity that the relationship of patient and physician shall remain as it has always been—the patient having choice of his medical attendant from the membership of the Alameda County Medical Association; and the

(*c*) Desirability of a plan of hospitalization under which the beneficiary would pay a small sum to a central organization, which would be conducted by a nonprofit organization controlled by officers of the medical association and executives of those local hospitals having accredited standing from the American College of Surgeons. This plan would guarantee payment to the hospital, and leave the beneficiary in a position to finance his obligations to his physician.

To keep the cost of laboratory service, roentgen ray and medicine in the same ratio as the cost of medical service, the pharmacists' association, roentgen ray and pathological laboratories were embraced in the Alameda County plan.

In this plan we believe that we fulfill most of the recommendations of the Committee on the Costs of Medical Care.

FORMER CONDITIONS IN ALAMEDA COUNTY

It may be well to review the situation which prevailed in Alameda County prior to beginning this study and which has helped to make the adoption of this plan possible.

In 1918 there was established in Oakland, through the initiative of Miss Annie Florence Brown, a clinic for the medical care of the indigent sick and persons of moderate means. This was accomplished with the approval of the Alameda County Medical Association, after a thorough study of the problem. The organization, an eleemosynary corporation, was named the Public Health Center of Alameda County.

In this connection one may be reminded that even in 1918, fifteen years ago and long before even the most pessimistic had foreseen the present economic cataclysm, public attention had been directed to the need for a public health service of this sort.

Alameda County boasted several clinics (in Berkeley, Alameda, and in rural districts) but they operated as independent, unrelated units with no central control. Each received assistance from the Community Chest and the County Board of Supervisors. Patients who had tuberculosis were cared for by the Alameda County Tuberculosis Society.

About July, 1917, the supervisors had established the Alameda County Institutions Commission; its purpose, to take entire charge of the operation of all county institutions wholly supported by county funds and designed for the care of the indigent sick. Its jurisdiction did not extend to clinics.

THE ALAMEDA SURVEY MADE IN 1930

The picture now shifts to the year 1930, with the problem of medical care becoming more and more acute. In this year several health organizations, cognizant of the critical situation, requested a county health survey. The request was carried to the State Board of Health by the Board of Supervisors. It was granted and the survey was made by J. W. Mountain, a surgeon of the United States Public Health Service, the expense being defrayed by the Alameda County Tuberculosis Society.

---

* Read at the second general meeting of the California Medical Association at the sixty-second annual session, Del Monte, April 24-27, 1933.

Doctor Mountain's report embraced two main sections:

1. Prevention of disease and promotion of health; and
2. Care of the sick.

The report recommended that the treatment function of health centers (clinics) be assumed by the County Institutions Commission. This involved control over appointments, budgets and accounts and, where desirable, the ownership of property.

The Mountain report gave the supervisors a clear picture of the problem of the care of the indigent and near indigent. In August, 1932, resolutions were adopted in accordance with the report's recommendations. On September 1 a new set-up went into effect, and thus all the pay clinics went out of existence with one stroke. Thereafter only those citizens who were indigent could receive care at any of the clinics in Alameda County operated by the County Institutions Commission.

Meanwhile, under the direction of the commission and the supervision of the county medical director, Dr. Benjamin W. Black, the following public hospitals and sanatoria were operating:

1. Highland Hospital, a modern institution of 450 beds.
2. Fairmount Hospital, a convalescent hospital with 900 beds.
3. Arroyo Sanatorium for citizens with tuberculosis; and
4. Del Valle, a preventorium for children.

Economically and efficiently conducted under Doctor Black, each of these institutions has its superintendent, except the preventorium, which is in charge of the superintendent of the adjacent Arroyo Sanatorium.

HOW ALAMEDA COUNTY MET ITS NEW PROBLEMS

Even before these changes went into effect, Alameda County had maintained a staff of county doctors who had served patients in their homes on a fee basis. Under the new set-up the county physicians were made regular county employees on a salary basis covering part-time service.

These changes left in the hands of the Alameda County Medical Association the problem of caring for the low-income group, who in the new arrangement were now without medical care.

Concluding an extensive and exhaustive study of the problem, the Alameda County Medical Association at a meeting in October, 1932, adopted the following resolution:

> Whereas, It has come to the attention of the Council of the Alameda County Medical Association that certain changes have taken place in connection with the work performed by the county doctors, its county physicians, and the consideration that they have given to the "indigent sick" and "dependent poor"; and
>
> Whereas, Public Health Centers have up to this time cared for certain patients from whom certain fees have been taken, and who appear to be not eligible for care at the expense of the public, under the Indigency Act of the State of California; and
>
> Whereas, The county profession realizes the importance of maintaining a service for patients that are not able to pay a full fee; now therefore be it
>
> *Resolved,* That it appears to be necessary to establish a plan whereby certain patients formerly cared for at health centers, who do not technically fall under the term "indigency" and at the same time require attention at the hands of reputable physicians, and whose care should be assumed at a fair price within the ability of the patient to pay; and be it further
>
> *Resolved,* That the Alameda County Medical Association agrees to establish a list of physicians who will volunteer to accept calls for such classes of patients and to render service when called in coöperation with the established official county agencies and centralized social service, as established in Alameda County and according to such additional plans as may be adopted.

It was gratifying to note that the call for volunteers met with practically 100 per cent response.

Numerous problems were met with in putting the plan into effect, and one of the first was the re-rating of patients. Where formerly the ratings of applicants to clinics were A, B, C, D, and E, depending on the applicant's financial rating, the new schedule fixed the ratings simply A and R, the first meaning "without resources" and the second "with some means to pay for medical services."

Thus all applicants were automatically divided into two definite classes: those without resources and therefore dependent upon county aid, and those able to pay to some extent but who cannot be classed as indigents under the law. These latter patients are being served by the members of the Association, and are given proper care whether able to pay one dollar or only fifty cents.

Physicians on the volunteer list are listed alphabetically, geographically, and as to specialty; and they are called in rotation. The physician makes the original call, supplies the necessary professional services, and charges the patient a fee that he is able to pay. The fee is paid at the time the service is rendered.

NECESSARY ELEMENTS IN THE PLAN

Necessarily the carrying out of this plan requires the fullest coöperation of the various clinics. Where a family applies to a recognized charitable agency and the family is not known to the agency, the call is referred to a physician in the same manner through the central social service agency.

If the doctor who has been sent on the case can work out the financial problem with the patient, then he is retained on the case by the patient and the case becomes a part of his own private practice. If he determines it to be an indigent case, he may refer the patient to the clinic operated by the county, to a hospital operated by the county for charity cases, and/or to the county physician who is paid by the county to care for indigent patients.

For each patient the doctor makes out a report, the form of which was adopted by the Alameda County Medical Association. Brief but comprehensive, this report describes the financial and social status of the patient and indicates the disposition of the case by the doctor. Filled in by the doctor, the report reveals the total family income per month, the length of time the income has been received, the number of persons supported on the income and whether adults or children; debts, savings, nationality, whether the home is owned or held by equity—mortgage, rent or payments on home—whether patient is a war veteran and length of residence in the county. For reference it bears the name of the agency by which the case was referred, name of the social worker, medical diagnosis, and probable duration of illness.

On the reverse of the report the patient signs his name below a printed paragraph which says the patient has made the foregoing representations for the purpose of securing necessary medical and hospital service, being unable to pay in full or anything, as the case may be. He consents that the report may be furnished to the Health Department of Alameda County and to the various charity agencies, and agrees to pay for the medical services specified at the part-pay fee schedule of the Alameda County Medical Association.

As a component element of the Alameda County Plan there was formed an obstetrical group, the members of which will accept any patient referred to it by the social service at a reduced fee. The money collected from such patients is deposited in a central fund which, after the visiting nurses are paid, is divided equally among the members. The purpose of this plan of division is to avoid the possibility of Jones consistently receiving more than Brown for his services, or vice versa. Jones might have a run of five-dollar cases, while Brown was getting five times that sum for each case. The division plan, however, tends to solve that problem.

Coöperating with the Association in carrying out the plan, the established pathological laboratories have agreed to render services within the means of the individual to pay. To illustrate: If the specimen is sent to the laboratory, one-fourth of the regular fee is charged. If it is necessary for a laboratory representative to call at the house of the patient, one-half of the regular fee is charged.

The x-ray laboratories have likewise agreed to perform the service required of these part-pay patients at 25 per cent less than their established rate, while similar coöperation was given by the Alameda County Pharmaceutical Association, members of which have agreed to provide standard drugs at low prices to part-pay patients.

Finally, an arbitration committee has been appointed to which shall be referred any question of policy or complaint of member, and a decision of the committee shall be final.

HOW THE PLAN AFFECTS THE PHYSICIAN

We now see the individual physician working under this plan as the master of his own private clinic rather than a worker in a public clinic for the low-income group. Conditions which prevail today indicate that the patient of low income is entitled to a lower fee consideration, but it is quite possible he may presently graduate into the higher economic classification, fully able to finance his medical problems at the standard fees. The physician, therefore, through his generous coöperation, will have added to his practice and in the meantime has received something for his services. As for the patient, he has maintained his self-respect by avoiding indigency and paternalism, and thus may also have escaped a pernicious habit, destructive of his morale. Moreover he has been given good medical care, which, from his standpoint, is perhaps the most important consideration of all.

While it is desired to avoid unduly hasty conclusions, it now appears that the plan, operating since January 1 of this year, has been eminently satisfactory to both the physicians and the patients. During the month of February, 151 patients were referred to private physicians on the volunteer list, and the total since the plan went into operation is 506.

CREDIT RATING AS APPLIED TO THE PLAN

Oakland is the headquarters for the Retailers' Credit Association of Alameda County, a merchant-owned bureau of 500 members, with 350,000 names in its files, and with state and national affiliations. With this bureau the Alameda County Medical Association has entered into an agreement by which the credit bureau has established a medical file containing a complete record of all patients on the books of its members. The names of the patients are furnished to the bureau by individual doctors, who in turn are entitled to full credit information on any person listed in the medical file.

For this service each member-doctor agrees to pay an initial membership fee of five dollars and thereafter the sum of one dollar monthly. In addition to an unlimited number of telephone reports on information contained in the medical file, he is entitled to reports on information contained in the bureau's master file. Full standard written reports are furnished for seventy cents each.

Obviously this service will at present be used principally in connection with names not acquired under the part-pay plan, but the margin of difference may be small in some cases, if any exists at all. Therefore the bureau has agreed to furnish a rating on any part-pay patient, or indigent, whom the doctor believes may have emerged from the low-income group and is able to assume his medical obligations on a normal basis. The bureau undertakes to obtain and deliver the facts in the case, for which service a fee of one dollar is charged.

COÖPERATION GIVEN BY OTHER GROUPS

Important to the efficiency of the Alameda County Plan are the liaison relationships established between the Tuberculosis Association of Alameda County, the Alameda County Medical Association, and the County Institutions Commission. The first named, which is purely an eleemosynary organization deriving its support from the sale of Christmas seals, assists the county in its tuberculosis problems by providing a full-time social worker in the county clinic to supervise and coördinate all of the tuberculosis social work; a physician devotes half-time to the clinic care of the tuberculous indigent; and two physicians in general practice pursue postgraduate study in the clinic. The latter two serve for a period of one year and their places are then filled by others in general practice, compensation for services being $25 a month.

In the establishment of this liaison, complete coördination of existing facilities was sought and obtained. While no new major developments were found necessary, certain revisions in authority were made, and the superintendent of Arroyo Sanatorium, Dr. Chesley H. Bush, was placed in charge as chief of the tuberculosis clinics throughout the county.

In order that this plan of coöperation may smoothly dovetail with the Alameda County part-pay plan, those patients who are not entitled to county care are referred to the executive secretary of the Tuberculosis Association, who is also a trained social worker. He, in turn, refers these patients to one of the physicians on the volunteer list. Before referring the patient he explains the importance of the examination of all contacts. In return it is required that, for statistical purposes, the Tuberculosis Association shall request report on the skin test, and if this is positive, on the findings of the chest roentgen ray. This insures proper examination of the contacts. A definite appointment is made with the physician to whom the patient is referred and the family notified of such appointment. In this manner accurate results can be tabulated, and through the various health departments such further supervision can be given as may be indicated.

Under this procedure the physician retains the patient, the family receives the necessary care at a proper fee, and the health department also receives accurate information.

HOSPITAL SERVICE ON PERIODIC PLAN BASIS

In endeavoring to meet fully all of the numerous problems encountered in formulating a comprehensive plan for complete medical care, the medical profession must of necessity give careful consideration to the major problem of hospitalization. Numerous plans for medical care separately, hospital care separately, and the two combined, have been put into practice, but the task of combining the two successfully has more often than not proved an insurmountable hurdle.

Adopting the premise that neither can of itself stand complete, and likewise that only a nonprofit group supported equally by the medical profession and the hospitals can render effective service to a large portion of the people of moderate means, the Alameda County Medical Association is now projecting an organization for the furnishing of hospital service on a periodic payment basis. This is being done with the aid of the Department of Public Relations of the California Medical Association, through Dr. Walter M. Dickie, Director, and Mr. Hartley F. Peart, General Counsel of the California Medical Association, who are coöperating with the council and officers of the county association.

This organization will be called the East Bay Mutual Hospitals, and will embrace in its membership every accredited hospital, other than county institutions, in Alameda County. The members of the East Bay Mutual Hospitals will select their directors from their own number, and the directors will select a medical director who shall be a member of the Alameda County Medical Association. All members of the Association will be eligible for appointment on the staff of the East Bay Mutual Hospitals.

Hospital service contracts will be issued at a cost to the holder of about $12 per year, payable quarterly. A contract will entitle the holder to service in a member hospital of his own selection, the necessity for hospitalization to be determined by his attending physician, a staff member of the East Bay Mutual Hospitals.

The board of directors will be composed of representatives of the hospitals with which East Bay Mutual Hospitals holds contracts, and of members of the Alameda County Medical Association.

In formulating this plan it was borne in mind that unless all hospitals in good standing in a given locality are embraced within the scheme, it will not prove satisfactory in the long run. When all hospitals in the community are working under identical conditions there is no chance for undue competition or underbidding, nor is the freedom of choice of physician or hospital in any way affected.

Details of the plan are now being completed by a committee of doctors and hospital representatives in coöperation with the Department of Public Relations of the California Medical Association; and the articles of incorporation, by-laws, staff rules, hospital service contract, and the application for beneficiary contract are now being prepared.

IN CONCLUSION

Such is the Alameda County Plan, presented in brief, designed to solve the pressing problem of adequate, efficient and satisfactory medical care and hospitalization to persons of moderate income; and we believe that it fulfills most of the recommendations of the Committee on the Costs of Medical Care.

532 Fifteenth Street.

DISCUSSION OF PAPERS OF DOCTORS REINLE, HOLDEN AND BROWN

R. G. Leland, M. D. (535 North Dearborn Street, Chicago, Illinois).—To those who have an uncontrollable desire to disorganize the time-proved methods of medical practice and to reorganize on the lines of big business, mass production methods of commercialism, the description of the organization of both the Alameda County and the San Diego Medical Society proposals must have been a disappointment. It is worthy of more than passing notice that both these proposals seem to be little more than a closer coördination of the community's existing medical facilities, and the physicians who have perfected the details of the plans have, thus far, not deemed it necessary to incorporate the feature of big business acquisition, viz., solicitation—a feature which is prominent in most of the schemes advocated by the medical revolutionary enthusiasts.

During the past one or two years the American Medical Association has been frequently and not too tenderly criticized for failure to bring forth for the entire United States a master plan to be used by county or state medical societies for a reorganization of medical practice. A careful examination of such a proposal should convince any fair and open-minded physician that it is utterly impossible, impracticable, and unwarranted for the American Medical Association to adopt such a procedure. To adopt, publish and recommend "a plan" would be to infer that a change is necessary in the tested and proved methods of medical practice, and the arguments in support of the necessity for such a change have thus far been unconvincing. To assume that "a plan" devised to illustrate a "model or typical or master method" of practicing medicine is utterly absurd. The several sections of the United States differ widely as to population, industry, age, customs, traditions and many other features. To urge a single new method and thereby to infer that the present methods are unsound and should be discarded or altered would be to hasten or precipitate that sovietization of medicine which the medical profession is seeking to avoid. All advocates of commercial medical schemes, involving complicated, top-heavy overhead organization, expensive administration, and unethical solicitation should be required to present their true credentials to indicate the nature and extent of their extra-professional interests and affiliations and the manner in which they expect to profit financially, politically, or otherwise in the promotion of these fictitious, artificial and economically and ethically unsound proposals.

There never has been a time in medical history when certain obligations upon the medical profession have been more clearly defined. One of these duties is, obviously, to resist all efforts to commercialize medicine. Commercialization of medicine means a deterioration of medical service and a disruption of medical organization. The evils and effects of commercial mass production methods are as inimical to the welfare of the public as they are to the advancement, freedom, and independence of medicine. The history of medicine records an enviable record of brilliant achievements and the application of numerous humanitarian measures almost entirely devoid of the element of personal aggrandizement and individual monetary gain. During the past several decades the medical profession has advanced tremendously in its ability to cope with scientific problems. It is unbelievable that a profession which has demonstrated such ability in the scientific field will now, because of the pressure of profit-seeking propagandists and the exigency of a general economic unrest, surrender the control of the practice of medicine just when professional control is most necessary. The medical profession can and must cling to and defend, for the public good, all those elements of medical practice which demand a high quality of medical care and an ethical conduct of its members.

Although I respect the ability represented in perfecting an organization such as that described by Doctor Brown of Santa Barbara, I cannot agree that the medical group which he has perfected is representative of the average medical group throughout the United States. I regret that so much space and time has been devoted to the details of the business, property holding arrangements, income and purely personal or professional advantages of a group arrangement. Our primary consideration should be, rather, to direct our efforts to the development of the superior service, if any, that can be provided to the public and, secondarily and incidentally, the guarantee of personal or group financial security. If a medical group, no less than an individual physician, is able to justify its existence and methods on the basis of quality of medical services, with fairness in its dealings with patients and honorable ethical conduct with those physicians not members of the group, the financial security can usually be arranged quite naturally and normally.

A report of group practice will soon appear in the *Journal of the American Medical Association.* I hope this report will receive careful study by all who may be interested in that method of medical practice.*

I am firmly convinced that the American public wants its family physicians rather than any highly organized complicated form of medical combination. The family doctor of average ability can successfully care for about 90 per cent of the illnesses in any American family. The allegation that a large section of the American public is suffering because of the paucity of medical facilities is unconvincing when one knows the nature and habits of the medical profession. I venture to predict that few, if any, physicians, even in these troublesome economic times, have refused medical care to any person regardless of his ability to pay. To be sure the political subdivisions of our states should pay for the care of the indigent sick; but it has not yet been demonstrated that commercial schemes which reduce the value of the medical dollar of the low-income group by 20 to 75 per cent can be justified even on the ground of spreading the cost over a large population group.

It appears that the writing of "medical plans" has become a fetish, and the profession is told that inaction in this matter will be fatal. Action in any direction is never justified solely to satisfy the desire to be doing something. Change is never justified unless the advantages which that change introduces are superior to the conditions which the change supplants. Our faith to detect the changes that must be made in the methods or administering medical care, if and when necessary, must be placed in the medical profession itself and not in profit seeking, commercially minded promoters.

In the study recently completed by the Bureau of Medical Economics less than 15 per cent of the 224 groups which answered the inquiry had adopted any arrangements for a flat rate charge for any type of medical service.

The comments of many indicated that the physicians doing group practice are not in favor of insurance arrangement for meeting the costs of medical care. A flat rate monthly payment plan such as that to which Doctor Brown referred, if adopted by a medical group under whatsoever pretext would at once give that group an unfair commercial advantage over the other physicians in the community and would both directly and indirectly set in motion a very undesirable form of public education. If the public is led to believe that for a small monthly payment medical care can be secured for all or most of the human ills, the natural and unavoidable inference will be that regular medical fees are unfair and exorbitant.

The fees derived under such an artificial and unnecessary scheme, applied during an abnormal economic period, will have become frozen when normal or prosperous conditions return and an upward revision of medical fees can then be made only with the greatest difficulties.

Insurance schemes *do not* sell themselves; they must *be sold.* This sales element involved in the distribution of medical ervices under insurance schemes constitutes a violation of the principles of professional conduct and the practice of medicine which for thousands of years have proved their fairness, soundness of doctrine and faithful adherence to the best interests of the public. Those who are promoting these commercial schemes during a temporary financial exigency are not only breaking faith with the thousands of honest and devoted physicians who have established and striven to keep unsullied the high ideals of the medical profession but also are encouraging the public to lose confidence in the medical profession to which it has always looked for honest, unselfish, personal service.

Not all of these promoters of unsound schemes are found among the lay business propagandists. Many professional promoters are urging that the principles of ethics be changed so that they may have some

---

* Report referred to was printed in *The Journal of the American Medical Association,* issues of May 20, May 27, 1933.

"new" and "modern" principles to protect them as they "put over" these recently conceived pilfering plans.

To lessen the standards of the principles of ethics would be to cheapen and reduce the quality of medical care. To change the principles of ethics to satisfy certain conniving cliques would be to sell out to commercialism. To lower the standards of medical conduct would be to allow medicine to become a mere trade.

The principles of medical ethics are neither antiquated nor obsolete. These principles must govern in the practice of medicine now as never before. I believe that most physicians concur in the value and the interpretation of the principles of ethics in medicine, and it is this majority who must compel their general application.

If medicine be at the crossroads, then surely the medical profession and *not* commercial conjurers must select the correct course. And this selection will be made in the interests of the public no less than for the continued freedom, independence and self-respect of medicine itself.

CENTRAL CLINIC SERVICE—SAN DIEGO COUNTY PLAN*

A PLAN FOR REDUCED FEE MEDICAL CARE AND HOSPITALIZATION

By HALL G. HOLDER, M. D.
San Diego

THE San Diego Central Clinic Service is a community project developed and sponsored by the San Diego Health Council of the Community Chest. The Health Council, composed of representatives of the San Diego County Medical Society and thirty-two health and associated social agencies, realized the necessity of some reorganization in existing health facilities. There was duplication of effort, inefficient expenditure of money, and unnecessary free medical clinics. There was further realization that some change in the distributions of the cost of medical care must come with the changing social and economic order. Those interested were agreed that adequate scientific medical service should be accessible to everyone, regardless of income, and that physicians who rendered this service should be remunerated in some proportional degree. The plan was approved and adopted by the San Diego County Medical Society on December 14, 1932. Responsibility for medical supervision of the plan was placed with the Clinic Committee of the County Medical Society.

Maintenance funds for an experimental period of one year have been provided through subsidies from the Community Chest and the Board of Supervisors, the latter's appropriation being based on the expected saving to the County Hospital. The success of the plan to date has been gratifying, and is due to the whole-hearted support of our physicians, hospitals, Community Chest, Board of Supervisors, social agencies, nurses, druggists, and many other lines of business and agencies having direct or indirect interest in the cost of illness.

BASIC OBJECTS OF THE PLAN

The plan is predicated on adequate scientific medical care for every citizen, according to his ability to pay, as revealed by a thorough and standardized medical social service survey.

This social service is provided to all who apply or who are referred by a central exchange known as the Central Clinic Service. This centralization makes for efficiency in collecting and maintaining all pertinent data. In its present location in the Community Chest Building, the Central Clinic Service has access to social information from the common exchange of the other agencies. Furthermore, credit information is available through the Merchants' Central Credit Association.

The plan, as organized, is adapted to the existing institutions and agencies in San Diego and does not interfere with the established fundamentals of medical practice.

ORGANIZATION OF THE CENTRAL CLINIC SERVICE

The board of directors of the Central Clinic Service is composed of representatives from the County Medical Society, Community Welfare Council, County and City Health Departments, County Hospital Advisory Board, Health and Development Departments of the City Schools, Navy Relief, Mercy and San Diego Hospitals. This places on the board at least four doctors who have had experience in community health and hospital problems. The board of directors employ an executive secretary, medical social workers, and clerks to maintain the service.

The operating committees of the board are: a case committee, finance committee, and a publicity committee, the latter interlocking membership with the publicity committee of the Community Chest and the Medical Society. Table 1 shows the general plan.

HOW THE PLAN OPERATES

Patients are referred to the Central Clinic Service from four main sources: the physician, social agencies, clinics, or direct by the patient himself. By far the most important of these is the physician, who in the majority of instances has the first contact. This was emphasized by a recent survey of the admissions at the County Hospital, where it was found that 60 per cent of the patients were referred by physicians. It was further estimated that one-third of the monthly admissions would likely be absorbed by the Central Clinic Service when in full operation.

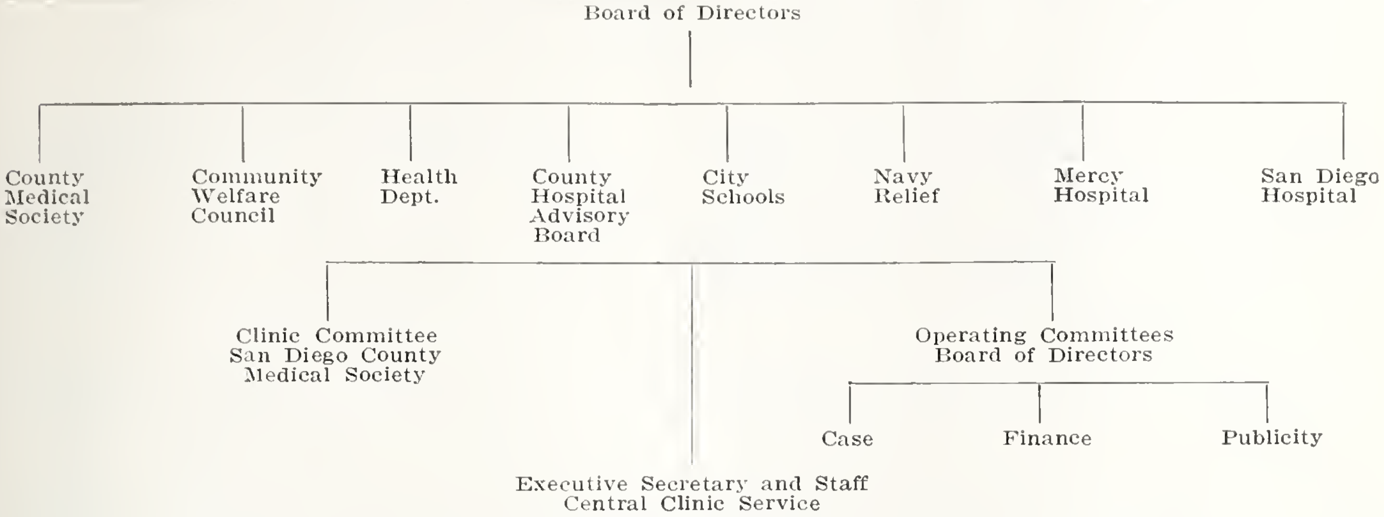
At the present time eligibility for hospital or clinic treatment at the County Hospital is based on the fact that the applicant cannot pay full fees for medical care. Previously there was no provision for treatment in San Diego of indigent or part-pay nonresidents, excepting emergency cases which are accepted at the County Hospital. In establishing the reduced fee plan, eligibility standards at the County Hospital have been revised. In this connection it is planned that all treatment clinics except the county be placed on a part-pay basis.

---

* From the Clinic Committee of the San Diego County Medical Association.

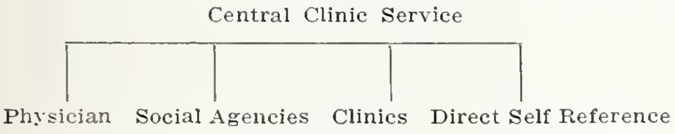
* Read before the second general meeting at the sixty-second annual session of the California Medical Association, Del Monte, April 24-27, 1933.

Table 1.—*Showing Relationships in San Diego Clinic Plan*


Board of Directors
County Medical Society
Community Welfare Council
Health Dept.
County Hospital Advisory Board
City Schools
Navy Relief
Mercy Hospital
San Diego Hospital
Clinic Committee San Diego County Medical Society
Operating Committees Board of Directors
Case
Finance
Publicity
Executive Secretary and Staff Central Clinic Service

In order that patients be distributed efficiently, it is necessary to obtain a detailed picture of their social and economic status. Such a classification is impossible on the part of the social worker unless the physician furnish information as to probable length of illness and the cost of the treatment involved. After estimation of the above factors, the Central Clinic Service is expected to refer as many patients as possible to the offices of physicians, on a reduced fee basis.

Table 2.—*Sources of Reference*



No patient is referred to another service without consultation with the patient's physician. Should a patient apply direct to the Central Clinic Service and it is found that he has had a physician, the latter is consulted before any arrangement is made for treatment. The physician in each instance must accept the report of the social worker and agree to the part-pay plan worked out on the basis of the patient's financial responsibility. Should this be so low as to be impractical for acceptance in the physician's office, the patient may then be referred to a part-pay clinic. If further problems arise during the treatment on the reduced fee plan, such as need for additional care, complications, or the need of hospitalization, then the Central Clinic Service is contacted to arrange a plan for the new situation. These patients are eligible to hospitalization on a reduced fee basis if their economic situation permits, otherwise they automatically become eligible for county care. Likewise, part-pay clinic patients may avail themselves of reduced fee hospitalization if possible. Indigent patients are sent to the County Hospital.

THE PHYSICIAN'S OFFICE IN THE PLAN

The keystone of the plan is the physician's office. Reduced fees arranged by the social worker are for the most part on a cash basis. The physician may elect to treat patients in his office at part-pay clinic rates. Should the financial status of a family or patient change, the physician applies to the Central Clinic Service for a check-up relative to a change of classification. It is distinctly understood that in accepting cases the physician agrees to the social plan for each patient as determined by the Central Clinic Service. Furthermore, all information furnished the Central Clinic Service relative to the medical situation and, conversely, financial information regarding patients or families, is held to be strictly confidential. In referring patients to the Central Clinic Service for investigation no mention of fees is made to the patient by the doctor, as these are to be apportioned according to the ability of the patient to pay as determined by the social investigation.

The pediatricians in conference with the health department have recommended a plan for chil-

Table 3.—*Sources of Distribution*

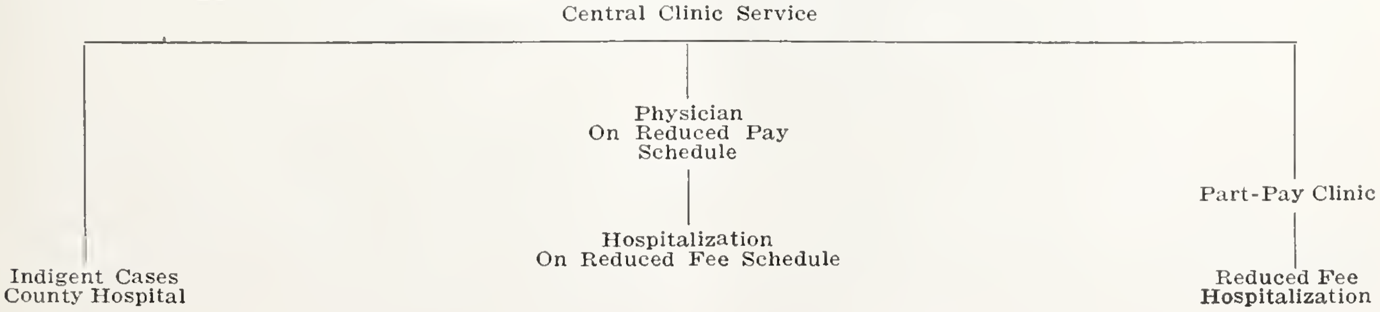
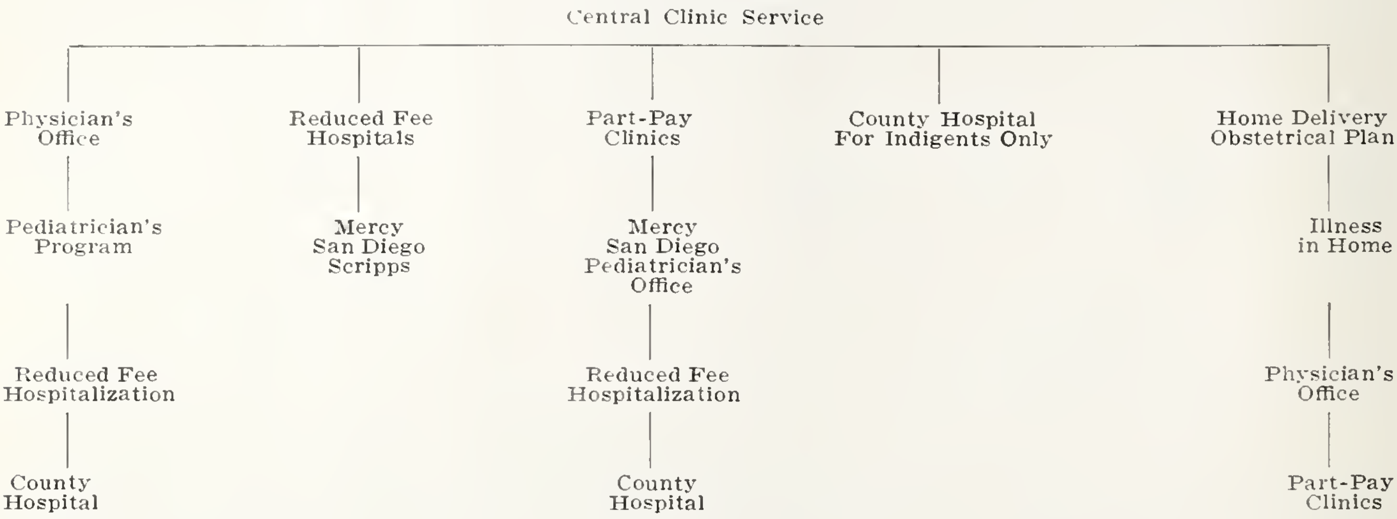

Central Clinic Service
Physician On Reduced Pay Schedule
Hospitalization On Reduced Fee Schedule
Part-Pay Clinic
Reduced Fee Hospitalization
Indigent Cases County Hospital

Table 4.—*Facilities and Plan of Operation*



dren which has been made a part of the general plan. Diagnostic and treatment clinics for children will be conducted in the physician's office under the proper classification, as determined by the Central Clinic Service.

It was further recommended that a concerted effort be made through the health department and school organizations to have all immunization against diphtheria and smallpox made hereafter in these private low fee clinics. In this connection an advertising campaign was instituted early in the school year, announcing that immunization would be done for a stated period at reduced fees in the physician's offices. Children whose parents were unable to pay the reduced fee would be immunized free of charge, the health department furnishing the necessary materials.

The home delivery obstetrical plan would permit adequate obstetrical care in the home at a lower fee than hospitalization permits, and may be carried on from the physician's office or from central clinics, for pre- and postpartum care of these patients in the districts where they are most abundant. Such a program provides for proper equipment and nursing assistance through the aid of the Visiting Nurses' Bureau.

PART-PAY CLINIC FEES

Fees for part-pay clinics are as follows: Registration fee of one dollar for the first visit and diagnosis. In this instance the physician is asked to contribute his services gratis, as twenty-five cents of the fee will be allotted the clinic and the remaining seventy-five cents will go toward financing the maintenance of the Central Clinic Service. For all subsequent visits the patient will be charged fifty cents, twenty-five cents of which will go to the clinic, and twenty-five cents to the physician. Laboratory work will be charged for on the basis of fifty cents per examination; physiotherapy at fifty cents per treatment; and roentgen-ray diagnosis practically at cost.

REDUCED FEE HOSPITALIZATION

Hospitalization at reduced fees for patients certified as entitled to this service is arranged on the following basis:

Medical patients: ward bed, $3; two-bed ward bed, $3.25; and private rooms, $3.50. This fee includes all roentgen-ray examinations, laboratory work, and medication with the exception of certain expensive drugs and sera. It is to be understood that these patients will accept ward beds unless the attending physician indicates that the nature of the case requires other accommodations. For surgical and obstetrical patients, in addition to the laboratory work and medicines, fees for delivery room and operating room will be included at the following rates: ward bed, $3.50; two-bed ward, $4; and private room, $4.50. This plan is to operate on a cash basis for both the hospital and physician, although the latter will accept regular monthly payments when necessary. The medical or surgical fees will in no instance exceed the cost of hospitalization, but in most cases should be approximately the same. For example, the ordinary surgical patient remaining in the hospital about two weeks would represent $50 as the cost of hospitalization, and the statement of the surgeon would be for a similar amount. The anesthetist and assistant are arranged for at proportionate fees. An individual or family capable of paying more than $150 cash or in short-time installments would not be entitled to this reduced fee service.

Major illnesses in the home are cared for in a similar way on the basis of that part of the regular fee which the social investigation would show the patient could pay.

The problem of the allocation of patients referred to the Central Clinic Service when patients express no choice of a physician, is handled by assignment of such patients in alphabetical rotation to those physicians who have signed with the Central Clinic Service as interested in the different fields of medical practice.

COÖPERATING AGENCIES

An interesting development has been the number of agencies willing to coöperate. The nurses of the Mercy Hospital Alumnae Association provide twelve-hour nursing service at a minimum of $3 a day, the determination of the need for such service being the responsibility of the physician and not the patient. The ambulance companies, optical

Table 5.—*Analysis of First Quarter's Work—Central Clinic Service*

For the Period, January 3 to March 31, 1933

Total number of hospitalizations arranged	70
Total number of hospital days	915
Approximate number of hospital days, medical patients	50
Approximate number of hospital days, surgical patients	865
Total number of cases referred to physicians' offices (19.3 per cent at full fee.)	119
Total number of part-pay clinic patients	87
Total number of patients referred by C. C. S. to County Hospital (13 per cent had previous County Hospital records.)	47

Table 6.—*Analysis of First Quarter's Work—Allocations and References—Central Clinic Service*

For the Period, January 3 to March 31, 1933

Analysis of Allocation of Patients	
Patients referred to physicians	119
Patients referred to Mercy Clinic	42
Patients referred to San Diego Clinic	45
Patients referred to hospitals	70
Patients referred to County Hospital	31
Patients referred back to County Hospital	16
Patients referred to other plans	22
Patients referred to Venereal Clinic	10
Patients referred to Venereal Health Department	44
Patients referred incomplete	52
Total	451
Sources of Reference of Patients	
Referred by County Hospital	70
Referred by self	60
Referred by physicians	171
Referred by school clinics	25
Referred by Mercy Clinic	37
Referred by San Diego Clinic	7
Referred by Venereal Clinic	54
Referred by other agencies	27
Total	451

supply houses, and the Retail Druggists' Association have volunteered to give generous reductions to those patients certified as entitled to such reductions by the Central Clinic Service. Special colored prescription blanks have been furnished to identify these patients. Such blanks entitle the bearers to this discount upon presentation at any drug store in the city.

CRITICISMS OF THE PLAN

Criticisms of the plan include: one, that it would tend to lower fees; and two, that it is a step toward state medicine.

In reply to the first criticism, one might state that the plan maintains regular fees, because reduced fees are only available to those who through medical social service investigation seem entitled to this consideration. All other patients who receive medical attention must employ a physician at regular fees, as no other service is available under this central control of medical facilities. If there is any reduction in regular fees it is done by the physician himself and, therefore, the responsibility for maintenance of a regular fee schedule rests squarely upon the members of the profession.

In regard to the criticism that the plan fosters state medicine, let me emphasize there is no municipal, governmental, or political control of this plan. The plan is under the control of the county medical society, includes all its members, and guarantees free choice of the physician by the patient. It is not operated for profit. It promotes the best scientific medical practice and removes the possibility of unethical competition because it fixes a fee schedule. Lastly, it is adaptable to present agencies and fundamentals of medical practice and therefore cannot, in fairness, be accused of tending toward state medicine.

ANALYSIS OF THE FIRST QUARTER'S WORK

The first three months' operation of the plan has shown the physicians to be enthusiastic about it and coöperating splendidly. The hospitals have expressed their entire satisfaction with the original arrangements and have stated their willingness to continue indefinitely. From the standpoint of the patients served, the results have been most gratifying. The striking response of people to the idea of a complete financial arrangement for an illness is most instructive. Many times the social worker has found individuals and families willing to provide for total fees which they had previously thought impossible; happy and contented to know the exact cost and to retain the physician of their choice and to maintain their own independence and self-respect. The psychology of this attitude, from the standpoint of the profession, is important in educating the public in meeting the cost of illness.

As time goes on arrangements are being made for complete correlation of the Social Service Department of the County Hospital with that of the Central Clinic Service.

The immunization program, widely advertised in the press and by radio, has been most successful. Nearly two thousand immunizations have been completed in the physician's offices to date. The closest coöperation is maintained with the health department in reporting cases immunized so as to make the program efficient from a public health standpoint.

Table 5 shows the high proportion of surgical patients needing this service which, due to the increased expense of surgical treatment, is a natural trend. Of the large proportion of patients who were referred to the physicians' offices, 20 per cent could pay full fees and were not entitled to reduced fee care. To date the need for the Part-Pay Clinic is much below our expectations, showing that arrangements in the physicians' offices can be satisfactorily made in the great majority of cases. Of the patients who were referred direct to the County Hospital, 13 per cent had received previous County Hospital care. The total fees paid by the Central Clinic Service to physicians, surgeons, hospitals, laboratories, etc., was $6,723.50.

Table 6 shows the reference sources and allocation of 451 patients who were registered in the first quarter. It is noteworthy that sixty patients applied direct to the Central Clinic Service. Of this number only twenty-eight had no physician. These were assigned in alphabetical rotation to members of the society who had registered for this work with the Central Clinic Service.

In conclusion, I wish to acknowledge and thank the many professional and lay groups whose interest and efforts have made this experiment possible.

1109 Medico-Dental Building.

LIVING GRAFTS OF ENDOCRINE GLANDS*

By HARVEY B. STONE, M. D.
JAMES C. OWINGS, M. D.
AND
GEORGE O. GEY, B. S.
Baltimore, Maryland

II†

COMMENT ON SOME STUDIES

STARTING with these basic conditions we carried through numerous experiments, many of which failed. We shall not report in detail those types of experiment that proved unsuccessful, but mention them in outline to complete the record of our studies and to show how we arrived at the more successful methods. With the idea of imitating the conditions under which tissue cultures are grown in various containers, we prepared cavities in the bone and cartilage. The rigid walls of such cavities we hoped would protect the growing graft from surrounding tissue pressure. The gland to be implanted was clipped and teased with fine instruments into tiny fragments. These were picked up with a pipette and injected into the prepared cavity with some serum. All of these experiments failed. Figure 1 shows such an attempted graft of thyroid after seventeen days. It will be seen that only a "ghost" of thyroid structure is left and that inflammatory reaction is pronounced. We felt that the use of the bone cavities had not prevented the ingrowth of fibrosing tissue as we had hoped, and sought other beds in which to plant the grafts. Following the lead of Halsted and others, the spleen was selected for its vascularity. In these experiments a better result was secured—Figures 2 and 3—but many grafts did not survive in the presence of extravasations of blood about them. Again following Halsted, we utilized the preperitoneal space behind the rectus abdominus muscle, placing the minced tissue in shallow rings of collodion. This also proved unsatisfactory. The adrenal gland was also utilized, with some success—Figures 4 and 5. Finally we decided that the loose areolar tissue of the axillae or groins offered the advantages we sought—freedom from pressure, closeness to good blood supply without the drawback of hemorrhage into the cavity made to receive the graft, and ease of access. As will be related shortly, our best results were obtained with this site of implantation.

As the work went on and failures accumulated with only occasional partial success, we became more and more convinced that besides the provision of a site that was suitable from mechanical and circulatory aspects, cognizance must be taken of the problem of biological and chemical compatibility between graft tissue and host body fluids. In seeking a solution of this problem, the resources of tissue culture technique again suggested a method of attack. It is well known to those familiar with tissue culture that many tissues will *survive* in artificial media for short periods of time, but will *grow* only in fluids from animal sources, and these frequently have little or no relation to the body fluids of the animal from which the tissue was derived, or even to its species. Provided that certain chemical and thermal qualifications are met, plus absence of bacterial contamination, the question of specificity of the source of nutrient media for some types of tissue maintained by tissue cultures seems not to be important within rather broad limits. For other types, marked specificity seems indicated. Thus, in the former instance, cat tissue cultures may be grown in a medium made up from the less specific constituents of dog's blood with additions of other substances. This fact suggested a lead that might prove fruitful. If a tissue culture is grown for a lengthy period in a medium derived from one animal, may it not become adapted to the individual serum chemistry of that animal? Should this adjustment take place in the comparatively simple environment of an artificial tissue culture set-up, would not the culture, if grafted into the animal giving the serum, prove better adapted to its host than if no such preliminary chemical acclimating had taken place? The idea seemed worth a trial, and since our results in this particular type of experiment are the most promising, we will give in detail the protocol of such an experiment.

Experiment.—On June 26, 1932, dog P. O. 1 was anesthetized after the usual dose of one-quarter grain of morphia and the thyroid exposed under aseptic conditions.

One lobe of the thyroid (right) was completely removed and the incision closed with black silk. A portion of this lobe, about one-third of its total volume, was cut into pieces of such a size as is suitable to culture, and cultures were made. P. O. 2 was bled by cardiac puncture in order to get serum and plasma for use in the culture medium. The cultures were carried on for thirty days, being transferred every three or four days, according to their degree of activity and their effect upon the medium. On July 24 about two-thirds of the left lobe of the thyroid was removed from P. O. 2 in order to produce a deficiency. The right lobe of this dog had been removed on June 26 in order to carry out a similar experiment, and used for grafts to P. O. 1. One parathyroid was left. On July 27, under general anesthesia and aseptic technique, two transplants were made from tissue cultures of P. O. 1, grown in medium containing serum and plasma of P. O. 2—one transplant in the left groin, and the other into the left rectus muscle of P. O. 2. These were, therefore, "tissue culture adapted" (thirty-day interval) iso grafts. The dog was kept on the usual laboratory diet, with no medication until October 10, at which time, eighty days after implanting the tissue which had been grown previously in culture for thirty days, both grafts were removed, their position having been marked by black silk sutures in the rectus and by the injection of India ink in the skin of the groin. No functional tests were made on the dog, but he did not show any evidence of thyroid deficiency, which may well have been prevented by the amount of thyroid left in the neck rather than by the grafted tissue. Sections of the tissue removed showed no per-

---

* From the Surgical Hunterian and Surgical Pathology Laboratories, Department of Surgery, Johns Hopkins University.

* Guest-speaker paper read before the general meeting of the California Medical Association at the sixty-second annual session, Del Monte, April 24-27, 1933.

† Part I of this article was printed in CALIFORNIA AND WESTERN MEDICINE, June, 1933, page 409.

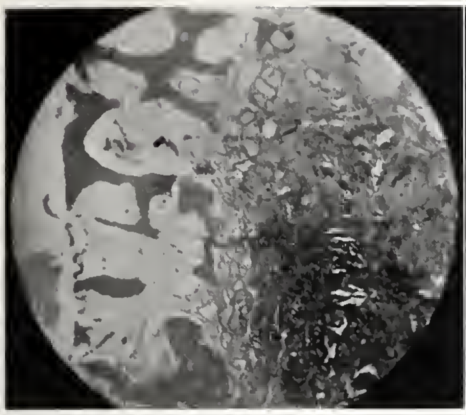


Fig. 1

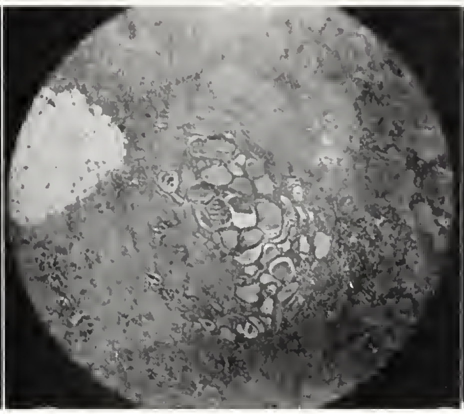


Fig. 2

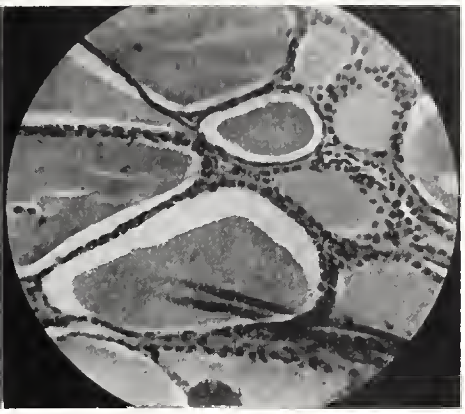


Fig. 3

Fig. 1.—Dog O. P. 2 (B)—Isograft of thyroid into cartilage seventeen days postoperatively.

Fig. 2.—Dog O. S. 7—Isograft of thyroid into spleen fourteen days postoperatively.

Fig. 3.—Dog O. S. 7—Higher magnification of isograft of thyroid into spleen fourteen days postoperatively to show preservation of cells and colloid formation.

sistence of the thyroid implant in the muscle, but in that taken from the groin a definite mass of thyroid tissue, 5 to 6 millimeters in diameter was found. Microscopically this showed two very different types of thyroid tissue, one in which there was very little colloid with very small alveoli, and the other with large, irregular alveoli, but still not very abundant colloid. The more cellular portion of the tissue looked almost like a new growth or a fetal adenoma of the thyroid, whereas the other portion looked more like a hypertrophic change. There was one area in the section that showed what might be considered a transition from one type to the other—Figures 6, 7, and 8. It is very interesting to note at this point the fact that cells from cell culture, such as will be shown in moving pictures taken of the growing thyroid cultures, can change from the sheet-like or branching forms which are seen there to the original thyroid architecture which is seen in the sections of the grafts eighty days after transplantation. The persistence of this graft for a period of eighty days led us to hope that we had accomplished our purpose, that is, that we had so changed the tissue to be grafted that it did not stir up an anaphylactic reaction and, therefore, was not disintegrated and cast off, as is usually the case. These two dogs were not matched nor grouped and nothing is known of their relationship. Therefore we cannot be sure, of course, that it is not an accidental successful take due to relationship, as sometimes apparently occurs.

TECHNIQUE IN HANDLING CULTURE GRAFTS

At this time it seems appropriate to describe briefly our technique in handling culture grafts in our more recent work in the transplantation of parathyroid. The routine procedure, evolved over the period of the last six months and which we are using now, is as follows: Two dogs are chosen without any regard to age, size, breed, sex, etc., and both operated upon on the same day, at which time one parathyroid is identified and left in position together with about half of one lobe of the thyroid gland. The rest of the thyroid gland and the other three parathyroids are removed. Blood is obtained by cardiac puncture for the determination of the normal level of the blood calcium at the time of operation, and also for serum and plasma to be used in the culture medium. Immediately after the first operation the dog is put on a low phosphorus diet and kept on it until we are ready to test the physiologic function of the graft. In the first cases when we were not absolutely certain of the identification of the parathyroids, a small portion of each glandule to be cultured was saved for microscopic section in order to

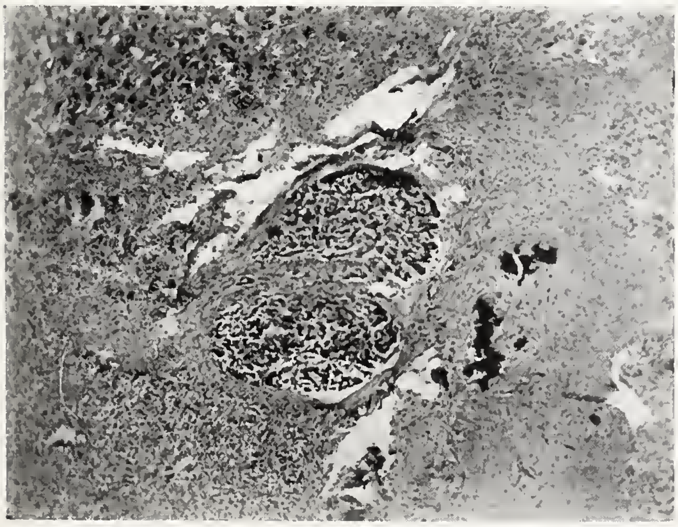


Fig. 4.—Dog O. P. 17—Isograft of parathyroid to adrenal twenty days postoperatively.

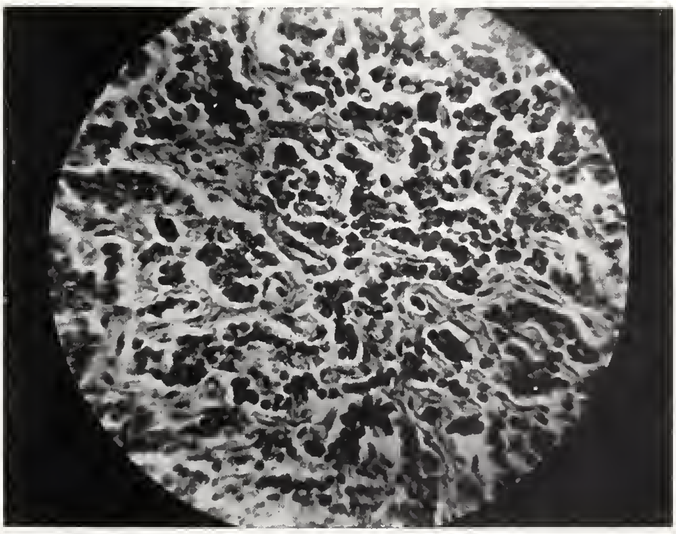


Fig. 5.—Dog O. P. 17—Higher magnification of isograft of parathyroid twenty days postoperatively to show details of cells and stroma.

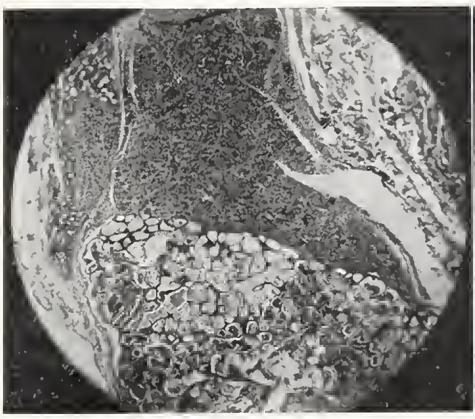


Fig. 6

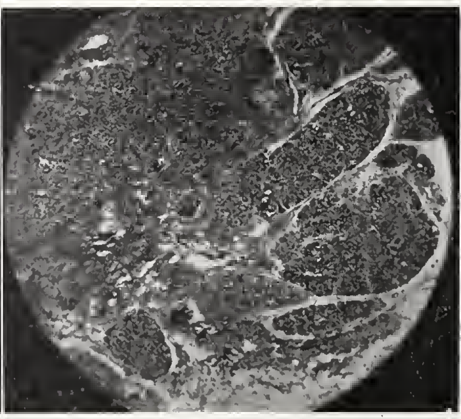


Fig. 7

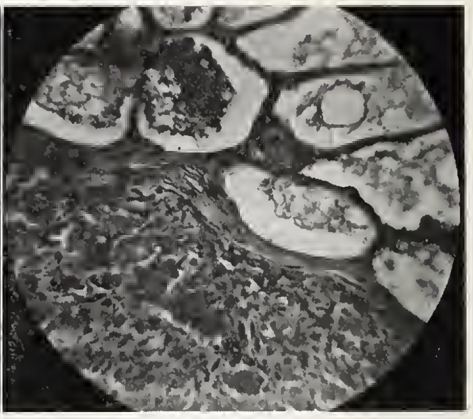


Fig. 8

Fig. 6.—Dog O. P. 2 (A)—Isograft of thyroid into subcutaneous tissue by cell culture method eighty days postoperatively.

Fig. 7.—Dog O. P. 2 (A)—Isograft of thyroid into subcutaneous tissue by cell culture method eighty days postoperatively, to show lobulation of growth.

Fig. 8.—Dog O. P. 2 (A)—Isograft of thyroid into subcutaneous tissue by cell culture method eighty days postoperatively, with higher magnification, to show details of the two types of tissue.

avoid the criticism that we might be culturing thyroid tissue instead of parathyroid and also for our own satisfaction. After considerable experience we found that we could easily tell thyroid from parathyroid tissue when it was cut in Ringer's solution, for the thyroid tissue exudes a stringy gelatinous material when it is cut, whereas the parathyroid when cut shows masses of cells which seem to fall out of the stroma in a stream like a whitish precipitate. We have confirmed this many times by histologic section and we now feel confident of being able to tell the two types by this difference when cut under saline solution. This may seem beside the point, but we frequently found tiny accessory lobules of thyroid in the capsule of the gland which were impossible to tell grossly from parathyroid by any method other than the cutting test. We have never found more than four parathyroids in any dog, and frequently not this many, in spite of various reports we have heard to the contrary. The parathyroid to be used for grafting is cut into very tiny segments about one to two millimeters in diameter and grown in tissue culture in a plasmatic medium containing beef embryo juice, an artificial serum saline and the serum and heparinized plasma of the dog who is to receive the graft. These cultures are carried on for a month, being transferred to fresh medium every three or four days. The idea is that the tissue will become so adapted to the essential elements of the blood of the recipient during this period of a month or more that when the transplant from tissue culture is made its antigenic properties will be so changed that it will not stir up any foreign protein reaction. It might seem at first that growing the donor's cells in the recipient's fluids by tissue culture might be the means of "diluting out" the nonviable antigenic substances of the donor, leaving the living cells of the donor as the only source of antigenic substance. The rôle of this adaptation by culture is not as yet clearly understood.

Motion pictures were taken of both the growing thyroid and parathyroid. At the end of the four-week period the cultures are cut out of the medium and clotted in the recipient's fluids onto a very fine silk thread, which is then used to draw the mass of tissue into the site of implantation and tied in order to hold it in that position. A second blood calcium is taken at this time. After the grafts have been in for one month the last original parathyroid is removed and the third blood calcium is taken. For further proof of the function of the graft we intend to allow another month during which time the dog theoretically has no parathyroid tissue except that in the graft, but is still on a low phosphorus diet. We shall then put him on a regular diet to see if tetany ensues. If it still does not occur, the engrafted tissue will be removed as a final check and serial sections made. This should give us absolute proof both microscopically and physiologically of the success of the graft.

There are certain very striking facts to be noted in these experiments. First, not only survival of the implant occurs but definite and considerable growth in a relatively short period of time. Second, the resumption of characteristic architecture and structure, with at least the appearance of function, of a tissue that was implanted as tiny clumps of living cells bearing little resemblance to the original tissue. Third, the apparent adaptation of graft to host without signs of chemical or biological incompatibility, as evidenced by the absence of reaction about the graft, and the staining properties of its cells. We are, of course, not attempting to generalize on insufficient data, and it must be clearly understood that this is in the nature of a preliminary report. Nevertheless, we believe that we are justified in saying that the method just described holds out great promise for future progress. We have felt justified, on the basis of our experimental work, in carrying the method into clinical application. Thus far we have had opportunity to try it in only one instance, which is reported herewith.

(To be concluded)

PROSTATIC OBSTRUCTION—DEVELOPMENT OF ITS SURGICAL TREATMENT*

By Hermon C. Bumpus, Jr., M. D.
Rochester, Minnesota

II†

COMMENT

So convinced have I become that preliminary drainage should be confined to cases in which the renal function must be improved or urinary infection diminished, that I have never hesitated to remove through the urethra the obstructing portion of the hypertrophied gland, if the renal function was normal and acute prostatitis absent, as soon as the diagnosis was established. Preliminary treatment, except to improve renal function or reduce infection, is a useless waste of the patient's time and may make him much worse. In approximately a fifth of the cases to be reported in this paper no preliminary preparation was given, yet no difference was noted in their postoperative course from those receiving preliminary drainage. Much as this changed conception regarding the importance of preliminary drainage diminishes the time necessary for the correction of urinary obstruction from prostatic enlargement, it is insignificant when compared to the time saved by the employment of transurethral methods as compared with perineal or suprapubic prostatectomy.

This newer method of treatment is based, it would seem, on the firmest of logical grounds, for it aims at the removal of the obstructing portion only and not the entire enlargement.

Young's Punch.

The development of the material in America dates from Young's presentation of his prostatic punch in 1911, at which time he stated: "The amount of tissue removed at suprapubic operation is often so small that it seems ridiculous to have to perform a suprapubic operation for its removal." Although the instrument did much to stimulate transurethral work in America, its use in any but median bar and obstruction of the contracted neck of the bladder was impossible because of lack of adequate vision and failure to provide any means of hemostasis. Braasch, in 1918, described his median bar excisor, which permitted adequate vision but also failed to provide for hemostasis, and so was limited in its application.

Caulk's Modification.

Caulk, in 1920, presented a modified Young punch in which hemostasis was provided by substituting a cautery blade for the tubular knife of the older instrument. Although Caulk's instrument was faulty in vision, the control of bleeding was a long step forward, and he must be given credit for keeping the attention of members of the profession centered on the problem of transurethral resection, and for demonstrating, in spite of most adverse criticism, that the relief of obstruction is feasible in many cases. While using Caulk's instrument in a series of seventy-two cases, I noticed that the procedure was likely to be followed by an acute febrile reaction that generally subsided on the fourth or fifth day but which was sometimes unduly prolonged. Following the use of the knife punch, such reactions had been the exception. It appeared, therefore, that a cauterized area in the neck of the bladder was more prone to secondary infection than a cleanly incised area. The interval required for healing a burn in comparison with healing a clean incision seemed about to double the time over which such an infection might take place. This fact led me to abandon the instrument and to use in its place a Braasch cystoscope of the same caliber as the Caulk instrument, in the barrel of which a fenestra similar to the Caulk instrument had been cut.

Author's Modification.

This instrument gives adequate vision of the operative field so that one can determine what portions of the obstructing tissue to remove first and what their relative size and position is to almost all anatomic landmarks, such as the verumontanum, ureteral orifices, and interureteric ridge. Vision is adequate and there is no difficulty in removing whatever obstructing tissue is necessary.

To control bleeding I at first removed the instrument and replaced it with a cystoscope, and with a flexible electrode lightly electrocoagulated the bleeding areas and touched each large arteriole which could be seen spurting in the irrigating fluid.

Since then the instrument has been modified in construction so that a multiple needle electrode is thrust into the tissue before the knife is passed, and so renders the course of the knife blade through the tissue more or less bloodless and reduces to a minimum the necessity of electrocoagulation of the tissue after excision. This procedure had been employed by both Day and Kirwin in a somewhat modified form, since in their instruments the coagulation is more extensive.

Other Instruments.

While these changes were being developed in the direct vision instrument, Stern was perfecting a lens instrument with which the obstructing tissue was resected by a reciprocating wire loop through which a high frequency current was passed. This instrument was later popularized by Davis, who demonstrated the possibilities of this form of resection and to whom most credit is due for the progress of transurethral resection during the last few years.

Following Davis's success, McCarthy produced his panendoscope, which is unexcelled as respects vision, and is equipped with a reciprocating loop which reaches out beyond the end of the instrument and resects the tissue as it is drawn back into the sheath. The loop is larger than in the original Stern instrument, therefore the operation can be carried on more rapidly. The instrument has become popular with urologists who prefer a lens instrument for doing this type of work.

---

* From the Section on Urology, The Mayo Clinic, Rochester, Minnesota.

* Stanley P. Black Memorial Lecture, Pasadena, California, January 16, 1933.

† Part I of this article was printed in California and Western Medicine, June, 1933, page 411.

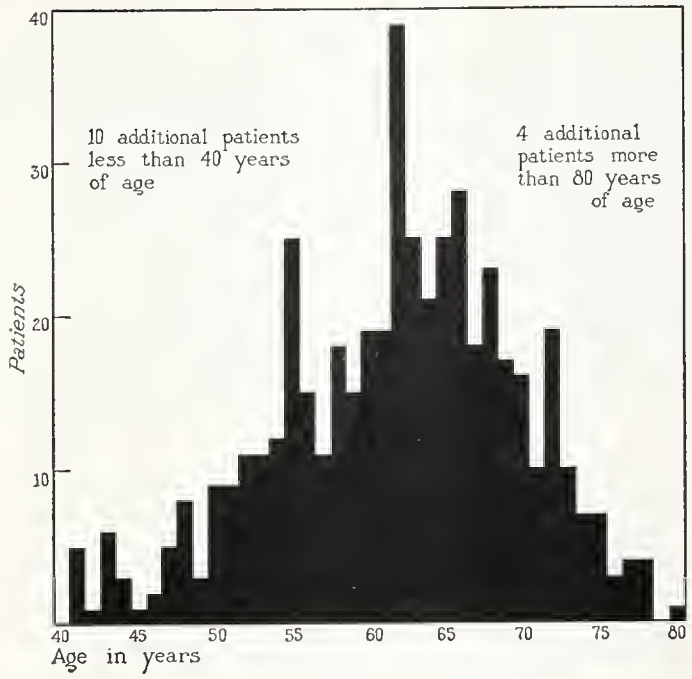


Fig. 2.—Ages of the 499 patients.

Other urologists, including Day, Cecil, Kirwin, and Foley, have developed instruments which, in the hands of their designers, have proved efficient.

PRINCIPLE OF THE OPERATIVE PROCEDURE

The method employed or the instrument used is not of great importance; the skill of the operator with whatever instrument he chooses is of far greater importance in determining success or failure. The principle of the procedure consists in removing in small pieces, under adequate vision and without the production of undue bleeding, all of the prostatic tissue which obstructs the urethra. If sufficient tissue is not removed completely to relieve the residual urine, an unsatisfactory convalescence is likely to occur. In such cases it is best to examine the patient after an interval of at least ten days. Usually it will be found that not sufficient tissue was removed originally, in which case the remaining obstructing tissue should be resected at once. In thirty (10.8 per cent) of the 276 cases in which operation was performed in 1932 at The Mayo Clinic, a second resection before the patient left the hospital was necessary to insure complete emptying of the bladder.

Critics of the method have stated that transurethral resection is open to the following objections: the results will not be permanent; fibroadenomatous hypertrophy having taken place the process will continue; the removal of only the obstructing tissue will of necessity be followed by the development of new obstructing tissue, and only by complete enucleation can this be corrected. In refutation of this contention Caulk has repeatedly called attention to the diminution in the bulk of a hypertrophied gland following the institution of suprapubic drainage. He holds that the same diminution occurs when the residual urine is removed; this is accomplished by rendering the patient capable of completely emptying the bladder by transurethral removal of the obstructing portion of the gland. That was demonstrated by 269 cases of adenomatous hypertrophy in which transurethral operation had been performed at the clinic since January 1, 1927. In only two patients was it necessary to perform subsequent prostatectomy; in only five was it necessary to remove further obstructive tissue at a subsequent date, and in sixteen of the cases the transurethral operation was undertaken to remove obstruction which developed after prostatectomy. Certainly this would indicate that the procedure gives as much hope of relief as does prostatectomy.

RESULTS WITH TRANSURETHRAL OPERATIONS

Since January 1, 1927, 545 cases of urethral obstruction from prostatic enlargement or deformity have been treated by transurethral methods at the clinic. In forty-six of these cases the obstruction was the result of contracture of the vesical neck, and good functional results were obtained by incision with the Collings electrode. As no tissue was removed, the operation has been classified as transurethral sphincterotomy. In 499 other cases, in which the average age was sixty-four years (Fig. 2), tissue was removed in amounts varying from 1 to 48 grams (Fig. 3). In forty-eight of these cases either a Stern-Davis or Stern-McCarthy instrument, employing the principle of the wire loop, was used; whereas in the remaining 451 cases the instrument previously described and developed in the urologic section of The Mayo Clinic was employed.

In the last two years larger and larger glands have been successfully dealt with. It has been found necessary to perform complete prostatectomy in only two patients during the last four months, during which period transurethral treatment has been carried out in 142 cases. The

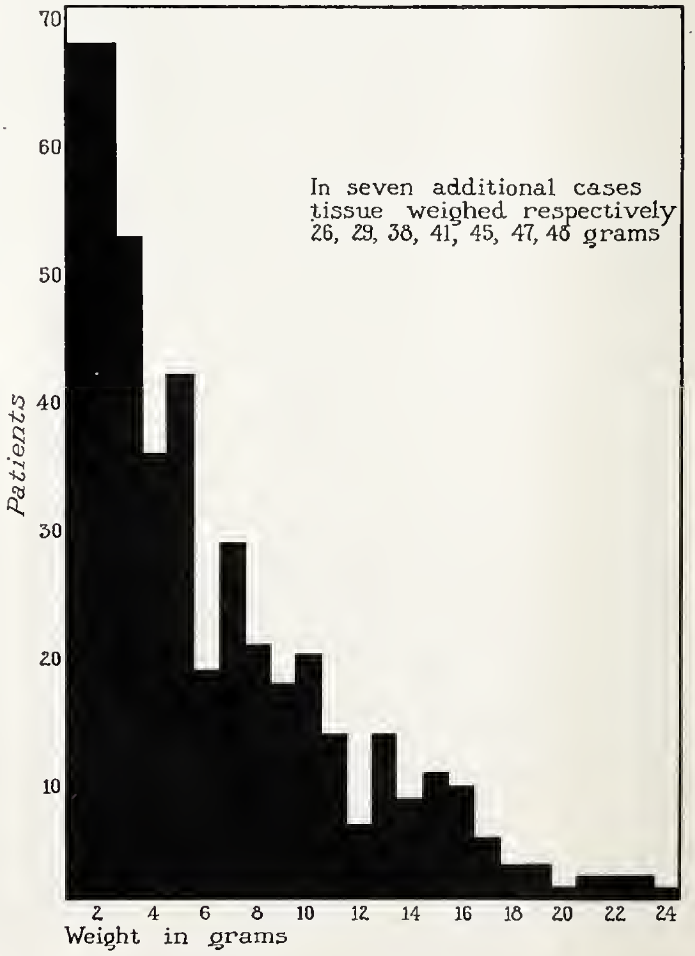


Fig. 3.—Weight of prostatic tissue removed.

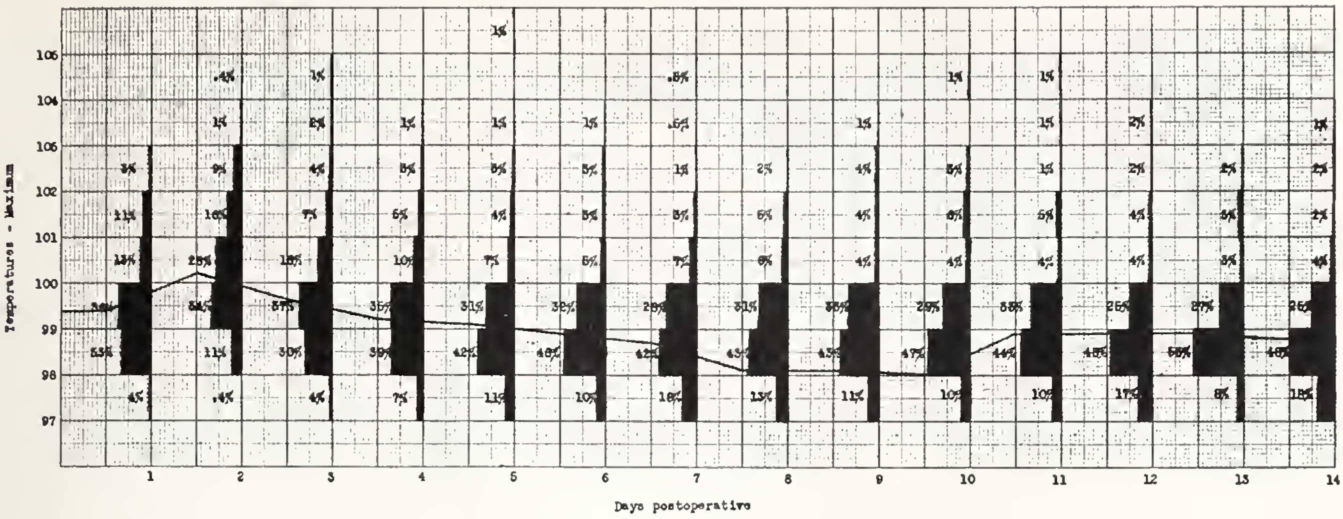


Fig. 4.—Maximal temperatures, Fahrenheit, on the different postoperative days in 276 patients treated in 1932.

largest amount of tissue removed at any one time weighed 48 grams. In the years 1929, 1930, and 1931, only 32.1 per cent of prostate glands removed suprapubically from 575 cases weighed more than 50 grams, so that from the standpoint of size there would seem to be few cases in which this method of treatment is not applicable.

As a whole, the patients are astonishingly free of postoperative complications. Of the 276 patients on whom operation was performed in 1932, only 38.7 per cent had a postoperative temperature higher than 101 degrees Fahrenheit (Fig. 4). The majority of patients (Fig. 5) leave the hospital on the fifth, sixth, or seventh day unless they have previously had a suprapubic cystostomy as preliminary preparation, in which case convalescence is prolonged by the time necessary for healing of the suprapubic fistula. In the last year cystostomy was done forty-four times (15.94 per cent of the cases), because of marked renal impairment or extensive urinary sepsis prior to removal of the obstruction through the urethra.

Bleeding is the most common postoperative complication, and it is the delayed rather than the immediate bleeding which gives the most concern. In the third week bleeding of more or less severity occurred in ten cases. In one patient cystostomy was necessary, and in two patients the loss of blood was severe enough to make transfusion seem advisable. The bladder usually fills rapidly with clots, and when these are emptied it is exceptional that a bleeding point can be found. The effort of the bladder to expel the clots seems to keep up the bleeding, and when they are evacuated the bleeding usually ceases. When the bleeding occurs within the first two or three days following operation, the bleeding point can usually be found and fulgurated. In the first one hundred cases, before this was fully appreciated, cystostomy was performed on two patients for the removal of clots. Since then this has never been necessary except in the case referred to, in which bleeding occurred on the twenty-first day after operation.

The most trouble with bleeding has occurred during the third week, when sloughs incident to fulguration are coming loose. In ten patients (2 per cent) bleeding during this period was severe enough to require the removal of clots by the cystoscope, and transfusions were given twice. In eight patients some bleeding occurred late in convalescence, but not of an amount sufficient to require treatment other than rest and lavage. To summarize, I may say that bleeding has occurred as a complication twenty-eight times (5.21 per cent) among 499 patients, five times as a postoperative complication, fifteen times during convalescence, and eight times after the patient had left the hospital. It has never been a contributory cause to any of the deaths, of which there were seven (1.4 per cent), in the last six years. All deaths were the result of renal or pulmonary infection secondary to trauma and destruction of tissue incident to the operation. No deaths have occurred for more than a year, during which period 291 patients have been operated on by the transurethral method. Since August 1, all but two of the patients with prostatic hypertrophy seen at The Mayo Clinic were treated by this method, and 142

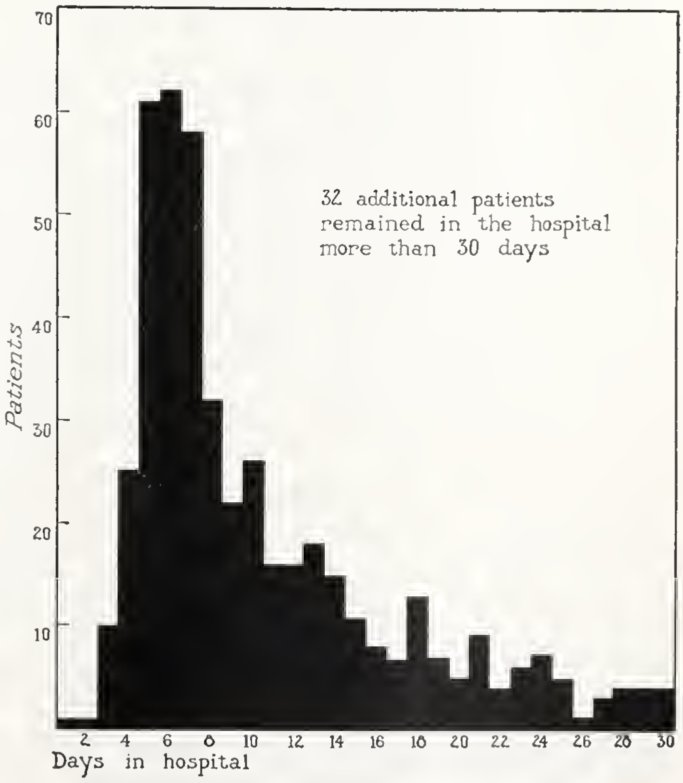


Fig. 5.—Length of postoperative stay in hospital.

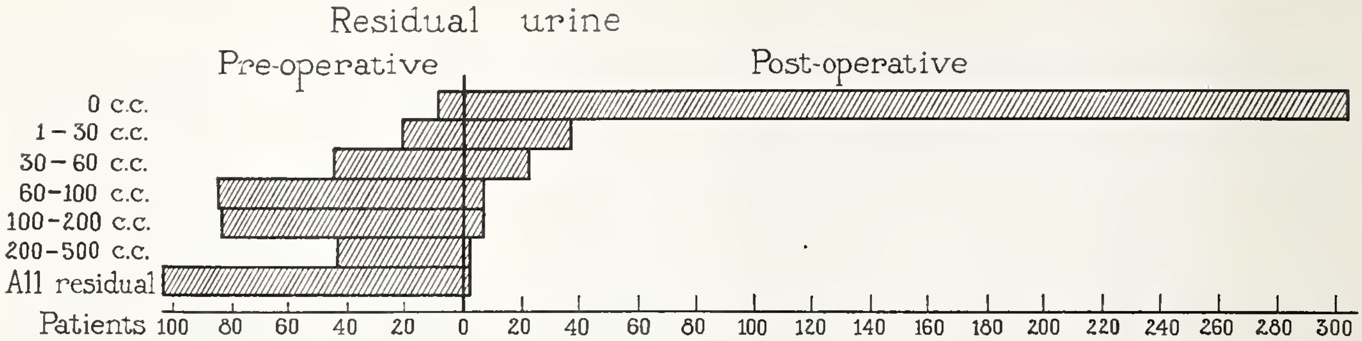


Fig. 6.—Residual urine before and after operation.

of these were given transurethral treatment. Much larger amounts of tissue had been removed from these 142 patients; and many were in such poor condition that prostatectomy had been refused; the patient was given the choice of wearing a suprapubic drain for life or consenting to transurethral removal of the obstruction.

IN CONCLUSION

In conclusion, I would emphasize that if preparation of patients suffering with urinary retention, the result of prostatic obstruction, is reserved for those with impaired renal function and severe infection, and the transurethral removal of the obstruction is substituted for some form of prostatectomy, the final functional results, as demonstrated by the reduction in residual urine (Fig. 6), seem to be equal, if not superior, to those obtained by more radical surgical procedures. Therefore, one hundred years after Guthrie's first efforts at the transurethral correction of prostatic obstruction, we are witnessing the realization of his endeavors, and another dread of advancing years has yielded to the progress of medicine.

The Mayo Clinic.

REFERENCES

1. Belfield, W. T.: Operations on the Enlarged Prostate, with a Tabulated Summary of Cases, Am. Jour. Med. Sc., 100:439-452 (Nov.), 1890.

2. Braasch, W. F.: Median Bar Excisor, J. A. M. A., 70:758-759 (March 16), 1918.

3. Bumpus, H. C., Jr.: Results of Punch Prostatectomy, Jour. Urol., 16:59-66 (July), 1926.

4. ——, Punch Operation for Prostatic Obstruction, Surg. Clin. N. Amer., 7:1473-1478 (Dec.), 1927.

5. Bumpus, H. C., Jr.: Transurethral Prostatic Resection, Brit. Jour. Urol., 4:105-121 (June), 1932.

6. Bumpus, H. C., Jr., and Vickery, E. B.: The Results of Punch Prostatectomy, Am. Jour. Surg., 4:328-332 (March), 1928.

7. Cabot, A. T.: Drainage of the Bladder Through a Catheter in the Urethra, St. Paul Med. Jour., 1:661-667 (Sept.), 1899.

8. Cabot, Hugh, and Meland, E. L.: The Problem of Drainage in Preparation for Operations for Prostatic Obstruction, Proc. Interstate Postgrad. Med. Assn. of N. Amer., 1932.

9. Caulk, J. R.: Infiltration Anesthesia of the Internal Vesical Orifice for the Removal of Minor Obstructions: Presentation of a Cautery Punch, Jour. Urol., 4:399-408, 1920.

10. Cecil, A. B.: A New Instrument for the Endovesical Treatment of Prostatic Obstruction, Urol. and Cutan. Rev., 36:194-197 (March), 1932.

11. Collings, C. W.: A New Method of Electrically Excising Obstructing Bladder-Neck Contractures and Bars, Jour. Urol. 16:545-569 (Dec.), 1926.

12. Davis, T. M.: Resection of Prostate Gland Obstructions with Stern's Resectoscope Equipment, South. Med. Jour., 22:528-534 (April), 1929.

13. Day, Robert: To What Extent Can Transurethral So-Called Bloodless Surgery Supplant the Operation of Prostatectomy? Urol. and Cutan. Rev., 36:163-169 (March), 1932.

14. Deaver, J. B.: Enlargement of the Prostate. Ed. 2, Philadelphia, P. Blakiston's Son & Co., 1922, 358 pages.

15. von Dittel: Blaseenpunction und nach trägliche Resection des mittleren Lappens wegen hochgradiger Hypertrophie der Prostata, Wien. Med. Blatt. 8:270-272, 1885.

16. Fergusson, William: Observations on Lithotomy, and on Certain Cases of Enlarged Prostate, Lancet, 1:1-2 (Jan. 1), 1870.

17. Foley, F. E. B.: Cystoscopic Prostatectomy—A New Procedure and Instrument—Preliminary Report, Jour. Urol., 21:289-308 (March), 1929.

18. Freudenberg, Albert: In: King, W. H.: Electricity in Medicine and Surgery, New York, Roericke & Runyan Co., 1901, 205 pages; 296 pages.

19. Freyer, P. J.: A New Method of Performing Prostatectomy, Lancet, 1:774-775 (March 17), 1900.

20. Fuller, Eugene: The Question of Priority in the Adoption of the Method of Total Enucleation Suprapubically of the Hypertrophied Prostate, Ann. Surg., 41:520-534 (April), 1905.

21. Guthrie, G. J.: On the Anatomy and Diseases of the Neck of the Bladder and of the Urethra. London, Burgess and Hill, 1834, p. 252.

22. Home, Everard: Practical Observations on the Treatment of the Diseases of the Prostate Gland. London, G. and W. Nicol, 1811, Vol. 1.

23. Kirwin, T. J.: Vesical Neck Obstruction, with Presentation of a New Instrument for Its Relief, Surg., Gynec., and Obst., 52:1007-1019 (May), 1931.

24. McCarthy, J. F.: The Prostate at the Crossroads, Am. Jour. Surg., 15:435-440 (March), 1932.

25. McGill: Suprapubic Prostatectomy, Brit. Med. Jour., 2:1104-1105 (Nov. 19), 1887.

26. Mercier, Louis-Auguste: Recherches sur le traitement des maladies des Organes Urinaires. Paris, 1856, pp. 36 and 213.

27. Randall, Alexander: The Varying Types of Prostatic Obstruction, Jour. Urol., 5:287-308 (April), 1921.

28. Randall, Alexander: Presidential Address, Jour. Urol., 28:127-132 (Aug.), 1932.

29. Rowntree, L. G.: Water Intoxication, Arch. Int. Med., 32:157-174 (Aug.), 1923.

30. Stern, Maximilian: Resection of Obstructions at the Vesical Orifice, J. A. M. A., 87:1726-1729 (Nov. 20), 1926.

31. ——, Minor Surgery of the Prostate Gland—A New Cystoscope Instrument Employing a Cutting Current Capable of Operating in a Water Medium, Internat. Jour. Med. and Surg., 39:72-77 (Feb.), 1926.

32. Tyvand, R. E., and Bumpus, H. C., Jr.: A Simple Technique for Prostatic Resection, Jour. Urol., 27:503-504 (April), 1932.

33. Wassidol: In: King, W. H.: Electricity in Medicine and Surgery. New York, Roericke & Runyon Co., 1901, 205 pages; 296 pages.

34. Young, H. H.: Operations on the Prostate. In: Young's Practice of Urology. Philadelphia, W. B. Saunders Co., 1926, p. 483.

CARDIOVASCULAR DISEASE IN DIABETES MELLITUS *

AN ANALYSIS OF FOUR HUNDRED AND TWENTY-FIVE CASES

By JAMES W. SHERRILL, M. D.
La Jolla

II†

WITH the above data at hand it is important that we regulate the diet of the cardiac diabetic so that wide fluctuations in the blood sugar be avoided. An adequate amount of fat, approximating 100 grams, acts as a buffer, and at the same time furnishes liberal calories and permits a very palatable diet. High fat diets are not to be tolerated, particularly in view of the tendency to produce hypercholesterolemia, which we now believe is a factor in furthering the advance of arteriosclerosis in diabetes. On the other hand low fat diets approximating 50 or 60 grams, which have been recommended by some, are not called for except for brief periods of time for the purpose of relieving acidosis or treating obesity.

RAPID FLUCTUATIONS IN BLOOD SUGAR TO BE AVOIDED

The average diabetic patient is satisfied with 120 to 150 grams of carbohydrate. Several observers have advocated very high carbohydrate allowances, and in some instances have gone to such extremes as to practically advocate unlimited amounts, including sugar, candy, and pastries. Careful investigation of the successful results of many of the cases treated by such unlimited means reveals in reality that the patients were not truly diabetic, but were elderly individuals with arteriosclerosis, who had previously been unnecessarily subjected to rigid dietary programs simply because a reducing substance had been found in the urine. Excessive carbohydrate in the diabetic calls for high insulin dosage, and alternating hyperglycemia and insulin shock is the result. One should be especially careful not to apply or practice such procedure when arteriosclerotic or hypertensive heart disease is a complicating feature, because of the potential danger of sudden fall of the circulating blood sugar inducing irreparable damage to the myocardium.

X-RAY EVIDENCE OF ARTERIOSCLEROSIS IN JUVENILE DIABETES

In view of the frequency of arteriosclerosis in diabetes it is of value to determine the time at which the early incipient changes begin. The x-ray has been employed in an attempt to demonstrate atheromatous or arteriosclerotic changes by several observers. Clare Shepardson [28] studied fifty diabetic patients under the age of forty who had the disease on an average of 6.9 years. Cases under five years' duration were excluded. Thirty-six per cent gave evidence of vascular sclerosis. He was not able to correlate the changes with the severity of the disease, but there was a relationship to duration. The incidence in his series was high partly because many were juvenile cases of long standing and had been under treatment for a number of years before discovery of insulin. In a group of 162 patients over forty, Bowen and Koenig [29] found positive x-ray evidences in 63 per cent. In 121 nondiabetic patients of a similar age period only 28 per cent were positive.

The changes in adult diabetics are evident, so we studied thirty cases in children in whom the onset of diabetes occurred before the age of sixteen. Special soft tissue technique was employed. The arteries and veins in the extremities in the normal individual can be recognized when imbedded solely in fat tissues, especially the subcutaneous fat. The posterior tibial vessels in the calcaneo-tibial space is one of the best regions for x-ray study. In only four instances (Table 4) were we able to state with frankness that atheromatosis or arteriosclerosis existed; in one other case the result was doubtful. We considered the findings positive only when there was sufficient deposit in the vessel to produce distinct difference in radiopacity with the blood vessels. Duration of diabetes is not the prime factor in producing roentgenologic changes. Case number 1827 developed diabetes seventeen years ago at the age of eleven and was under treatment by Dr. F. M. Allen for seven years before insulin was discovered. Her diet now approximates 140 grams of carbohydrate with 38 units of insulin. Fewer arterial changes are noted in her case than in Case number 3072, who is now sixteen years old and has had the disease only four years. The duration of diabetes in the cases showing positive changes is seven, four, seventeen, eight and three years. Several children with duration over five years show normal roentgenograms. The reason for the low incidence in this series is probably due to the fact that all the cases except Case number 1827 were treated almost from the onset with insulin, which permitted more liberal diets, especially carbohydrate; and at no time have they been subjected to high fat diets. We have not observed hypercholesterolemia in any of our juvenile diabetics except temporarily in a few instances.

SUMMARY

Angina pectoris, coronary thrombosis and arteriosclerotic and hypertensive heart disease are to be recognized as common complications of diabetes. In view of the relationship of the onset of these complications to the onset of diabetes they should be regarded as complications rather than as clinical entities accompanying diabetes.

Attention is called to the importance of maintaining good nutrition in the presence of these

---

* From the Scripps Metabolic Clinic, La Jolla, San Diego, California.

* Read before the General Medicine Section of the California Medical Association at the sixty-first annual session, Pasadena, May 2-5, 1932.

† Part I of this paper was printed in February CALIFORNIA AND WESTERN MEDICINE, page 74.

TABLE 3.—*Sixteen cases of angina pectoris (3.8 per cent) and ten cases of coronary occlusion (2.4 per cent) encountered in 425 cases of diabetes. The combined incidence of these complications and arteriosclerotic and hypertensive heart disease (32 cases) gives a total of 13.6 per cent for the heart complications in this series.*

Case No.	Sex	Age	Duration of Diabetes	Duration of Angina	Blood Pressure	Other Complications
Angina Pectoris						
249	M	78	28	3	178/94	Incipient cataracts
5341	F	60	22	1	160/78	Cataracts, ulcers of feet
3566	M	63	16	10 da.	118/70	Congestive heart failure
4274	M	58	13	2	120/85	
3637	M	73	12	2	170/85	
6073	M	43	12	1	120/70	
4086	M	69	9	11	130/80	Congestive heart failure
5012	M	69	9	2	135/90	Congestive heart failure
133	F	62	6	....	210/100	
496	M	59	6	2	108/72	Hyperthyroidism
1619	M	68	6	1	125/65	Retinitis and gangrene
3225	F	71	4	1	180/110	Gangrene
1777	F	45	3	1	168/80	
413	M	49	2	2	108/77	Hyperthyroidism
3392	M	70	1	....	154/87	
4403	F	54	1	3	180/105	
Coronary Occlusion						
1004	M	52	19	6	134/88	
3671	F	65	18	3 wk.	184/108	
4033	F	53	16	3	144/82	
1	F	78	10	1	140/84	
195	M	70	10	....	180/70	
6139	M	53	9	....	105/85	
1853	F	59	5	2 wk.	122/70	
2095	M	66	4	1	122/74	
4100	F	64	13 mo.	13 mo.	150/90	
4430	M	68	....	onset	145/88	

complications. Undernutrition in the strict sense should be avoided. Abnormal fat diets, under 60 grams and over 100 grams, should be used only in special instances. Attention is also called to the danger of hypoglycemia in arteriosclerotic diabetics on account of the production of myocardial damage. The average diabetic patient is satisfied with 120 to 150 grams of carbohydrate. High carbohydrate diets, which necessitate high insulin dosage, predispose the diabetic to rapid fluctuations from hyperglycemia to insulin shock, and caution should be employed.

In roentgenological studies of the posterior tibial arteries in the calcaneotibial space in thirty diabetic children for the purpose of investigating early and incipient vascular changes, only five positive observations were found.

The Scripps Metabolic Clinic.

REFERENCES

1. Root, Howard F., and Ashton, Graybiel: J. A. M. A., 96:925, 1931.
2. Nathanson, M. H.: Am. J. M. Sc., 183:495, 1932.
3. Bloatner, H.: New England J. Med., 203:709, 1930.
4. Wilder, Russell M.: Med. J., 19:241, 1926.
5. Ophüls, W.: Stanford Univ. Press, p. 131, 1926.
6. Warren, Shields, and Root, Howard F.: Am. J. Path., 1:415, 1925.
7. Levine, S. A.: Medicine, 8:245, 1928.
8. Hetenyi, J.: Wien, Arch. f. inn. med., 13:95, 1926.
9. Joslin, E. P.: Lea & Febiger, p. 706, 1928.
10. Modern, F. S.: J. A. M. A., 96:357, 1931.
11. Turner, K. B.: Am. Heart J., 5:671, 1930.
12. Allan, Frank N.: Proc. Staff Meet., Mayo Clinic (March 9), 1932.
13. Kramer, D. W.: Am. J. M. Sc., 176:23, 1928.
14. Joslin, E. P.: Ann. Clin. Med., 5:1063, 1927.
15. Allen, F. M.: Am. J. M. Sc., 167:554, 1924.
16. Barach, Joseph H.: Am. Heart J., 2:196, 1927.
17. Starr, Isaac: Am. J. M. Sc., No. 2, 180:149, 1930.
18. Dworkin, Simon: Am. J. Physiol., 96:311, 1930.
19. Bulatao, E., and Carlson, A. J.: Am. J. Physiol., 69:107, 1924.
20. Cannon, W. B.; McIver M. A., and Bliss, S. W.: Am. J. Physiol., 69:46, 1924.
21. John, H. J.: Surg. Gynec. and Obst., 44:190, 1927.

TABLE 4.—*Results of the roentgenological evidence of atheromatosia and arteriosclerosis in 30 children. Only five positive results noted. Only those children developing diabetes before the age of 16 are included. The duration of diabetes is calculated to date.*

Sex	Age on Admission	Duration of Diabetes	Present Diet			Insulin	Present		X-Ray Evidence of Sclerosis
			Pro.	Fat	C. H.		Hgt.	Wgt.	
F	8	6	75	75	130	60	59	100	0
M	6	7	70	110	140	50	56	95	0
F	11	7	66	60	105	60	61	133	+
F	11	5	....	....	....	105	60	115	0
M	14	5	110	130	180	60	71	143	0
F	11	5	75	75	125	66	64	131	0
M	5	5	85	85	186	26	46	55	0
F	16	4	65	75	75	48	65	133	0
F	1¾	4	75	75	125	18	37	36	0
F	8	3	75	130	135	40	56	63	0
F	14	3	70	80	125	45	65	116	0
M	13	8	70	90	115	....	....	......	0
M	13	7	70	130	130	82	....	133	0
F	11	6	70	75	100	70	62	127	0
F	12	1	70	75	145	32	60	92	0
M	18	4	70	110	150	12	66	114	0
M	10	¼	60	80	120	18	52	61	0
F	3	1 mo.	55	60	140	10	41	36	0
F	36	22	65	75	80	12	59	105	0
F	10	3	....	....	....	....	....	......	0
M	5	2	65	100	135	44	49	60	0
F	12	6	60	100	100	40	60	112	0
F	30	19	75	70	110	40	66	147	+
M	20	6	100	100	125	65	71	140	0
M	20	8	100	100	140	70	72	160	0
F	5¼	8	75	85	100	40	54	68	+
M	8	3	....	....	......	....	....	....	+
F	5	1	60	70	125	22	45	49	0
F	16	2	70	90	135	48	60	121	0
F	14	5	60	100	100	60	66	132	+
Average			73	88	126	45			

22. Goulston, S.: British M. J., 1:615, 1911.

23. Smith, F. M., and Gibson, R. B.: J. A. M. A., 88:1943, 1927.

24. Edmunds, C. W., and Cooper, R. G.: J. A. M. A., 85:1798, 1925.

25. Cruikshank, E. W. H.: Am. J. Physiol., 90:322, 1929.

26. Hepburn, J., and Latchford, J. K.: Am. J. Physiol., 62:177, 1922.

27. Middleton, William S., and Oatway, W. H.: Am. J. M. Sc., 181:39, 1931.

28. Shepardson, H. Clare: Arch. Int. Med., 45:674, 1930.

29. Bowen, Byron D., and Koenig, E. C.: Bull. Buffalo Gen. Hosp. (Dec.), 1927.

DISCUSSION

Howard F. West, M. D. (1930 Wilshire Boulevard, Los Angeles).—This paper of Doctor Sherrill's should be of great value to cardiologists and surgeons as well as to those more specifically interested in the treatment of diabetes. Adequate warning that elderly mild diabetic patients should have special consideration and overtreatment of the diabetes avoided, has been given repeatedly. It was well demonstrated by Woodyatt, in 1924, (*Southern Medical Journal*, Vol. 167, p. 570). In spite of these acute myocardial disturbances induced by a relative hypoglycemia are unfortunately not rare. That anginal pain and other cardiac symptoms may be induced in patients with coronary disease by overrestriction in carbohydrate alone, without insulin, has been graphically shown by Strouse, Soskin, Katz, and Rubinfield (*Jour. A. M. A.*, Vol. 98, pp. 866-870, March 12, 1932). With insulin the danger is obviously more imminent. There is reason to believe that the patient with arteriosclerosis needs to maintain a higher blood sugar concentration for functional efficiency than the conventional normal figures.

Surgeons should remember that the patient with gangrene, ulcer, infection, or other manifestation of peripheral arteriosclerosis almost certainly has coronary sclerosis as well and with such patients changes in the diabetic state should be brought about cautiously. Carbohydrate must not be overly restricted and insulin hypoglycemia should never be risked. This does not imply that insulin should not be used if its need is demonstrated, but does urge extreme caution.

The successful management of diabetes as emphasized by Doctor Sherrill often means the skillful management of complications. Of these, those associated with arterial disease rank first in number. Adequate nutrition for the individual patient should be the goal of treatment rather than the attempt to obtain laboratory findings consistent with the standard variations of normal individuals.

⁂

H. Clare Shepardson (384 Post Street, San Francisco).—Diabetes mellitus is essentially a disease of middle life and old age. Two-thirds of the cases begin after the age of forty years. In our day, the average life expectancy is increasing rapidly. Consequently the incidence of diabetes has increased, and with this increase the complicating conditions involving the cardiovascular system have assumed a new and important prominence which cannot be disregarded.

As Doctor Sherrill, in his excellent treatise, has pointed out, the presence of diabetes mellitus is conducive to the development of vascular sclerosis. A natural sequel of the increasing prevalence of arteriosclerosis in diabetic patients is the very frequent occurrence of myocardial injury due to coronary disease. A striking proportion of those afflicted with diabetes die of cardiac injury with or without actual coronary occlusion and infarction. Formerly coma was the most common cause of death in the diabetic individual, but since insulin has become available, this cause of death has been largely replaced by arteriosclerosis. Proper treatment of the disease, therefore, involved not only alleviation of the metabolic disorder, but prevention of sequellae or, if already present, reduction of their damaging effects to a minimum. The physician must be certain that his treatment of the disease is not actually harmful to the patient. Consequently Doctor Sherrill is to be highly commended for advocating the maintenance of a constant blood sugar level averaging somewhat higher than the normal in those diabetic patients having cardiovascular disease. A high blood sugar is not of itself injurious to the myocardium. Glucose, and, of course, its stored form, glycogen, is an absolute necessity for the heart muscle and apparently exerts no deleterious effects through its presence. On the other hand, many writers have stressed the danger of suddenly reducing the carbohydrate in elderly individuals whose hearts are presumably somewhat diseased. A slight hyperglycemia insures adequate nourishment to the myocardium. Slightly undernourishing diets containing a moderately high carbohydrate element should be employed, thus making it possible to avoid large insulin dosages. Diabetes cannot tolerate large amounts of carbohydrate without the excessive use of insulin and the latter results in wide variations in the blood sugar content. Under such conditions the possibility of suddenly depriving the cardiac musculature of proper nourishment is obvious.

It seems apparent that more widespread utilization of the principles outlined by Doctor Sherrill will reduce the mortality from heart disease among diabetic patients and eventually result in an incidence but slightly greater than that to be found in normal persons.

⁂

R. A. Kocher, M. D. (Carmel).—This very instructive presentation of cases again opens up the important question of a possible causal relationship between diabetes and degenerative changes in the circulatory system.

As pointed out by Doctor Sherrill, the view has long been held that diabetes is an etiologic factor in arteriosclerosis. Recent facts from autopsy evidence, as well as pathologic studies, have definitely established this causal relationship. This being true, one naturally asks what feature of diabetes is responsible for blood vessel degeneration, with resulting increased percentage of death from arteriosclerosis, or through resulting heart failure with coronary disease? Increasing evidence has accumulated to leave no doubt but that faulty fat metabolism is a contributory cause. Aschoff, Windaus, Klotz and others have given ample proof of the fact that high blood lipoids, including fatty acids and cholesterol, are directly related to early changes in the walls of the blood vessels; from the aorta to the smaller arterioles. The sequence of events is beautifully presented by facts gathered and presented by Aschoff, who, in conclusion, stated, "The character of the diet remains the most important factor."

This being the case, and, as has been recommended by Doctor Sherrill in this paper, it is of foremost importance in diabetic management to keep down the level of fat in the diet. Too much emphasis cannot be placed on this phase of diabetic treatment, that is, to so regulate the proportion of fat, carbohydrate and protein with respect to tolerance and insulin dosage as to insure at all times the complete oxidation of fat and thus prevent accumulation of deleterious fat derivatives in the blood, which definitely have been shown to lead to early arteriosclerosis and other attendant evils. Only by such management can we hope to keep down the rising percentage of deaths in diabetes from this complicating factor.

I am in complete accord with Doctor Sherrill with respect to the dangers of sudden reduction of blood sugar in cardiac diabetics as well as in the over-restriction of carbohydrate in the presence of coronary or myocardial diseases.

THE PHYSICIAN'S INTEREST IN THE MAKING OF A WILL*

By Hartley F. Peart, Esq.
Of the San Francisco Bar

It is undoubtedly true, and natural, that the average man should shun all questions pertaining to his death. It is also very interesting to realize that many men, including specialists of no mean distinction, who would not dream of attempting to repair a leak in the plumbing or prepare the plans for a house, will, with cheerful nonchalance and without advice, write their own wills.

Let us take a typical case, that of John Brown, who has a family consisting of one daughter and his second wife, her stepmother. John Brown sits down to write out his own will and makes what he deems a fair and equal division of his property by stating that his daughter, by his first wife, shall have half of his property, and his present wife the other half. The will is entirely written, dated and signed by him, and so is a valid will. He has also taken out insurance on his life, some of the policies dated before and payable to his daughter, and some taken out after his second marriage and payable to his wife; the aggregate of insurance being equally divided between the daughter, on the one part, and the wife on the other. John Brown, being a prudent man, also secures a life insurance policy on his life, payable to his estate, in order that there may be plenty of cash available for payment of debts and expenses. And he puts his will in his safe deposit box, and dismisses the matter from his mind with the conviction that he has acted justly, and that a serious and necessary duty has been properly performed.

Let us see, however, what becomes of John Brown's estate and the proceeds of the insurance policies after his death. The widow is then informed by her attorney that she has a right to a family allowance which will be fixed by the probate judge and in which the daughter would share, if she were a minor; whereas, she being of age, no provision is made for her under this statute. One of the assets of the estate is the family home which was bought before the second marriage and, therefore, was paid for out of Brown's separate property. The widow is further advised by her attorney that the home can be set aside to her, as a probate homestead, for such time as the probate judge fixes, not beyond her life; and an order is made setting aside the home to her for her life. The daughter, being of age, can only occupy the home at the invitation of her stepmother, and her half interest in it begins only after the death of the stepmother. The widow is also informed that she is entitled to have set aside to her the household furniture and the proceeds of the life insurance policy payable to the estate (the annual premium being less than $500) because both the furniture and the proceeds of the policy are property exempt from execution.

In preparing an inventory of the estate, it is found that a substantial portion, namely, two-fifths of the estate, was acquired by John Brown after his second marriage. This two-fifths was not inherited by him nor given to him, and was not derived from property he had before his second marriage; and it is, therefore, community property of himself and his second wife. The widow's community interest in this two-fifths of his estate is not subject to the will of John Brown, but on his death one-half of the two-fifths in question goes to his widow. John Brown's estate, after the payment of the debts and expenses of administration, actually passes therefore, as follows: The widow receives the family allowance during probate which is a primary charge. She receives the home for her life; and if the home had been acquired from community property or community funds, she would have received it absolutely. The widow has received the household furniture and effects and the proceeds of the life insurance policy payable to the estate, which are exempt from execution. The widow, too, receives one-half of the two-fifths, which is community property, or one-fifth of the residue of the estate. The will is applied to the remaining three-fifths, and the daughter receives one-half thereof, and the widow one-half thereof.

---

* From the office of the general counsel of the California Medical Association. See also editorial comment, page 57.

The daughter has also had an unpleasant surprise following the death of her father, when told by the representatives of the life insurance companies that it would be necessary for her to obtain her stepmothers' waiver to any claim to the proceeds of the policies payable to the daughter, which the stepmother has refused to give. John Brown has paid a portion of the premiums (for the period during the second marriage) out of his earnings during that time, *i. e.,* community property, and the widow is therefore entitled to and receives a portion of the proceeds of these policies.

If John Brown were still living, he would certainly be greatly surprised to learn of the inroads made upon his estate by the statutes dealing with property exempt from execution, the provisions of the probate code for the protection and support of the family and the community property law; as his intention undoubtedly was to divide his property and his insurance equally between his daughter and his wife, after the payment of his debts and the costs of probate.

Physicians, by the very nature of their profession, and the close and confidential relations which they sustain to their patients, are consulted by many patients—sometimes of choice, and sometimes of necessity—concerning the preparation and execution of the will of the patient.

This little story of John Brown and his estate, necessarily a condensed and single illustration, clearly indicates that the drawing of a will should not be attempted, except with expert advice. There are, of course, many cases where such advice might not add materially to what the testator himself can do; but the law is intricate and complex, and every phase of the conditions relating to the testator's property, the situation and status of the members of his family, should be dealt with from a technical standpoint, if one is to obtain, as nearly as may be, the result desired.

MUSCLE TRAINING IN INDUSTRIAL INJURIES*

By T. E. P. Gocher, M. D.
San Francisco

Discussion *by Harold M. F. Behneman, M. D., San Francisco; John Homer Woolsey, M. D., San Francisco.*

A MUSCLE is a part of the body that causes movement. This is caused by the contraction of the muscle. The muscle should be in good condition to give the best result. This "condition" can best be obtained by correct training and exercise. The condition of the muscle will depend upon whether the motor, sensory, and trophic nerves are intact and functioning in a normal manner, and that the muscle substance is also normal.

Each muscle has a chief function of which it alone is the principal factor. This function can be developed and brought out by training. In movements where multiple muscle action occurs, care must be taken that the treatment given will exercise and develop the desired muscle. When powerful muscles are present in the area, too frequently they are the ones that benefit from the exercise, and not the weakened muscle.

Muscles may act against each other from lack of nerve control. Therefore it is important that when a muscle is desired to be contracted the opponent has full relaxation. This ability to relax will often have to be taught to the patient. Very frequently following an injury the patient tries too hard to move an area, and as a result an excess number of muscles are contracted and the motion of the joint is restricted.

Relaxation of a muscle is an active state. Full relaxation is very important and at times difficult to obtain. A muscle which is relaxed always has "tone" of some degree and is not flabby. An elongated muscle of normal consistency is firm and not flabby. The position of best rest of a muscle and its opponent is when their individual tensions are equal.

If a muscle is healthy the reaction to stimulation is sharp and well defined. When disease is present this reaction is diminished. The position of nerves in an area may vary considerably and so the motor points will vary, and must be located for each muscle.

DIAGNOSIS

The correct diagnosis is important if good results are to be expected in treating and training muscles. This is especially important in delayed muscle paralysis, which may occur from hemorrhage or secondary infection. The differentiation between a myositis, a neuritis, and neuralgia is often difficult. The treatment of each varies, and if given incorrectly may easily cause "unfortunate results." An incomplete rupture of muscle fibers is at times overlooked, and this may readily cause the patient much discomfort. Another diagnosis frequently overlooked is a serous tenosynovitis. In studying a series of cases, I found the following percentage of missed diagnosis:

---

* From the surgical department of the San Francisco medical office of the Aetna Life Insurance Company.

Incorrect diagnosis in 57.1 per cent. The missed diagnoses were, in my opinion:

	Per Cent
Incomplete rupture of fibers	7.5
Deep hematoma	18.0
Diagnosis of correct muscle injured	22.5
Fascitis of insertion of muscle	12.5
Myositis called neuritis or neuralgia	10.0
Serous tenosynovitis	20.0
Not recognize overworked or toxic muscles	10.0

RESULTS

Muscle training in itself is not often used alone, but in conjunction with other modalities excellent results can be obtained. Table 1 shows some of the results which can be obtained.

MUSCLE INJURIES

A muscle that has been traumatized should not be allowed to remain at rest for a long time or a fibrosis may develop. This condition may prolong the disability and cause pain and soreness, and may at times cause a "shortening" of the muscle. A muscle that has been "forced" may at times rupture, either partial or complete, and very frequently in these conditions a fibrosis develops at the area. Should this occur it will often limit the power and the contractile ability of the muscle. Therefore the sooner that movements are instituted in a muscle injury the less chance is there of a fibrosis developing.

A "pulled" muscle may be traumatized either at the tendon insertion or in the muscle fibers. The tendon insertion is the most common location for this injury. When this occurs, very frequently a very painful localized area develops. This may be very stubborn to cure unless treated correctly.

When a contusion of a muscle occurs, very often a hematoma develops; and this may organize and a very troublesome fibrosis develop, unless early treatment is instituted. Lacerations of varying degrees and strains may also occur. These conditions usually react well to appropriate treatment.

TREATMENT OF MUSCLE INJURIES

Treatment of muscle injuries is a study of importance. Unless this is done the disability period may be greatly prolonged and even a marked permanent disability result. In a series of cases I have found that if a muscle is kept at rest for two weeks or over, the average injured person loses control of that muscle. The muscle will then have to be trained to act in a correct and normal manner.

Heat.—Heat is frequently used in treating muscle injuries. One of the best sources for heat is from bakes. I have found that a good average time for this treatment is from fifteen to twenty minutes. Frequently heat is overused, and symptoms develop which may prolong the time of the disability. Heat causes a dilatation of the blood vessel of the area and improves the circulation. The radiant light tends to increase—the infra-red to decrease—congestion that is deep. Heat should be applied to a muscle before giving training exercises.

Table 1.—*Showing Results After Muscle Training*

Area	Cases	No. of Treatments to Cure	Days Treated
Strain quadratus lumborum	23	4	4
Strain lumbar muscle	9	2	5
Strain multifidus muscle	17	6	10
Strain rhombodei muscles	22	8	12
Strain latissimus dorsi	10	2	2
Incomplete fiber rupture	26	8	10
Facial paresis, unilateral	6	9	16
Improve grip 50 per cent	20	8	14

Massage.—I find that overtreatment with massage is frequent. The first treatment to an injured area should be of a mild and gentle nature. Simple stroking is all that is frequently required. I have seen a heavy massage given to an injured area cause a patient to be laid up in bed for several days. Many times the aching, cramps, and tired feeling which overtreatment causes retard the healing of an injury longer than if no massage had been given.

Electricity.—Electricity correctly given is of great value. The "opening up" of the blood vessels and the electrical changes caused by the high frequency currents tone up the muscle and benefit it. The circulatory improvement is of value, as it brings nutrition to the injured area. The sinusoidal and faradic currents may be used to cause contractions and exercise muscles. They may be a benefit or a detriment to the muscles, depending on the treatment given. Muscles are easily overexercised and overtired if they are weak.

In using electrical stimulation the contractions at first should be very slight and even "only felt" at times. I prefer the faradic current, as developed from the Bristlow coil, for individual muscle work. The sinusoidal current is best for "muscle group" work. The faradic current is very good for relieving "tired" muscles, if a fibrosis develops, and for the last stages of muscle training. The sinusoidal current is best for the early stages of muscle training, for treating myositis, and to improve the circulation.

Exercise. — Exercise should be given to all muscle injuries. At first they should be mild and care taken that the weakened muscle is not overtired. It is easy to overexercise a weakened muscle. The exercises should be given in the following order: assistive, passive, active and, lastly, resistive. Certain phases may at times be passed over very quickly. In giving resistive exercises, only sufficient resistance should be exercised to cause a good firm muscle contraction. Do not overtire the muscle. A good relaxation should be obtained after each contraction.

The signs of an overworked muscle are: lowered tonicity, lessened irritability, spasm not easily caused and readily "give out." Exercise makes the muscles worse, and rest relieves them. There may be a diffuse aching and throbbing at times.

The signs of a toxic or rheumatic muscle are: increased tonicity, increased irritability; and spasm and cramps are easily caused. Exercise improves, and rest makes them worse. The muscle has a ready ability to contract. There may be a general aching present, which usually disappears following exercise.

MUSCLE TRAINING

When training a muscle or group of muscles to obtain good control and strength, that area should be placed at rest in such position that no strain is placed upon the muscles. The muscle to be trained should be in a position of physical rest so that gravity will assist it in any motion requiring contraction. The patient should relax both mentally and physically.

The principal action of the muscle or set of muscles to be trained should be ascertained so that exercises can be designed to give the best results. An illustration of this is that the biceps brachii muscle's principal action is supination of the forearm, and flexion of the elbow is a secondary motion. The supraspinatus muscle holds the head of the humerus in the glenoid cavity, while the deltoid abducts the arm to a right angle. Other important muscle actions are those of the tibialis anticus, which is the chief muscle in holding up the anteroposterior arch of the foot; and the peroneus longus muscle, which is the chief agency holding up the anterolateral arch of the foot.

Muscles may be trained individually or in groups. I believe that excellent results can be obtained in training many muscles, first as an individual and then as a group. An illustration of this is in training the fingers. The movements of the fingers are as follows: the deep flexors chiefly flex the distal joints, the superficial flexors the middle joints, and the lumbricals the proximal joints. The distal two joints of the fingers are extended, chiefly, by the interossei and the proximal joints by the extensor communis digitorum muscle. Each of these muscles can readily be trained individually and later as a whole. This form of treatment will give excellent results in the restoration of finger movements.

The ability to control the muscle should be first taught. With the area at rest the patient should be first taught to fully relax the muscle. This lesson is often very difficult and may at first take as long as ten or fifteen minutes to obtain a good relaxation. In teaching a muscle to relax be sure the position of the area is at rest and that there is no strain that may cause discomfort. If pain or soreness is present it is often very hard to get the desired relaxation. At times it may be necessary to cause a contraction of the opponent muscle before the patient can "sense" what is meant by relaxation. Sometimes I have the patient further force contracting the muscle to be relaxed and then attempt relaxation. Contracting a muscle against slight resistance often assists in getting "control." If, then, relaxation is not obtained, the faradic and sinusoidal currents may be resorted to. After relaxation has been obtained the patient should be shown the motion desired, and the same should be fully demonstrated to him. At times full relaxation is not obtained until after a number of treatments have been given. The patient's ability to relax should improve with each treatment.

The first exercise should be given with gravity assisting. The movements should be of a mild nature. First relaxation, then a contraction, but do not hold, and follow this by a good relaxation. Great care should be taken not to overexercise the area, as an overexercised muscle is very often difficult to return to its original state. It is far better to give only a short treatment than to overdo the treatment. All muscular contractions should be performed slowly and fully. Do not use sudden forced motions. If muscle spasm should develop, the area should be given a good full rest and as much relaxation obtained as possible before attempting further contraction. This condition is often obtained when a weakened muscle is treated too strongly, too frequently, and good relaxation is not allowed.

Very often a patient tries too hard to move a certain area and as a result more muscles are contracted than necessary. In order to remedy this the patient should be instructed to try to contract the desired muscles only mildly and not to use force until he has good control of them. This point is often illustrated when a patient contracts practically all of the muscles in his arm in attempting to move a finger.

When there is no active control the use of electricity can be resorted to. Whenever possible I prefer to use the faradic current that is obtained from a Bristlow coil. This is because of the excellent control that can be obtained from this current and the type of contraction obtained. The motor points of individual muscles can very readily be stimulated by this current and training given. The sinusoidal and galvanic currents may also be used. The progress of a muscle with training is often very slow until voluntary control is obtained.

In using the faradic current I first place the area at rest and in such a position that there is no strain on the muscles. I then demonstrate and instruct the patient in the movements that are desired. The motor point of the muscle is found and the minimum strength of the current is ascertained that will give a good contraction of the muscle. The muscle is then passively stretched several times. The patient is instructed to try to contract the muscles very slightly; and as he does this I apply the current through the area of the motor point and obtain only a slight full contraction. I find that when using the current this way I obtain better results than if I had used all full strength and caused a full muscle contraction. As control is developed I lessen the strength of the current until it is no longer needed, and a good active contraction can be obtained. The sinusoidal and galvanic currents may be used in a similar manner.

The patient must be instructed and have demonstrated the correct manner of performing his exercises at home. If he should not fully understand these exercises and the manner of performing them, the best results will not be obtained. Be sure to encourage him, and do not lose patience with him. Be careful, especially at first, that he does not overexercise.

Table 2.—*Physical Therapy—Treatment Faults*

Treatment Considered	Northern California No.	Northern California 20 Patients Per Cent	Southern California No.	Southern California 8 Patients Per Cent	General Average
Too much treatment given	12	60	5	62	61
Treatment not sufficient	5	25	3	27	26
Overmassage	8	40	4	50	45
Poor control of bakes	11	55	6	75	65
Poor control of exercise	17	85	6	75	80
Poor muscle training	18	90	8	100	95
Explain what light work is	6	30	2	25	27½
Explain benefit of work	5	25	1	12	18½

MUSCLE-TRAINING FAULTS

In studying a series of cases, I found the following muscle-training faults and causes of prolonged disability periods.

	Per Cent
Delay in starting motion to an injured muscle	80
Overtreatment of injured muscles	82
Not exercising the weakened muscle to best advantage	90
Allowing a fibrosis to develop in injured area	78
No home exercises given in scientific manner	45
Patient did not fully understand home exercises	76
Considering patient able to treat self out of office	46

There are other causes for the poor results that are at times obtained, but the above will be sufficient to give some idea as to the causes why good results are not always obtained. The above table was obtained by asking and considering every question with each patient. Table 2 also presents a summary of some treatment faults.

CONCLUSIONS

Muscle injuries are very common, but good muscle training is an art that is possessed by only a few. Too often overtreatment is given, and as a result the disability period is prolonged. Exercise should be given mildly at first and not a 100 per cent work to the muscle. A weakened muscle may be called "paralyzed" when, if correctly exercised, it will be found to be able to actively contract. If the action of injured muscles is carefully studied out and appropriate training given, excellent results may be expected in practically every case.

A muscle may be considered "weakened" until it has a good full active contraction and a normal ability to relax well. This may take anywhere from a few days to many months to obtain. Remember, where there is contraction there is hope.

The accompanying table was made up by the author, following a personal study of twenty-eight patients receiving physical therapy in the main centers. All the points were carefully studied in each case. In each case the disability was prolonged, and an attempt was being made to ascertain the cause.

333 Pine Street.

DISCUSSION

Harold M. F. Behneman, M. D. (384 Post Street, San Francisco).—The interesting facts and figures presented by Doctor Gocher bring to mind the constant economic loss not only from the original disability, but from hasty, inaccurate diagnosis and faulty therapy. No more than any branch of medicine is physical therapy a cure-all. It must be preceded by accurate diagnosis and administered by trained minds and hands. This series, compiled by Doctor Gocher, is not from one locality but from observation of cases on the entire coast. The definite conclusions he justly reaches should be a stimulus to medical practitioners to know physical medicine as they do chemotherapy. The technician too often bears the burden of the amount and kind of therapy a patient is to receive. We do not approve of a druggist prescribing for our patient, nor do we allow it. We have still less cause for referring "injured patients to a technician for treatment." Those of us who are fortunate enough to be in large medical centers with their clinics, see more faulty treatment than we do diagnosis. It is not uncommon to see increased disability from harmful therapy. Doctor Gocher's figures are in accord, as he found an average of 57.1 per cent incorrect diagnosis to 95 per cent poor muscle training, 80 per cent poorly controlled exercise, 65 per cent poorly controlled baking, and 61 per cent overtreatment. Aside from the injustice to the patient it is a severe economic loss to the industry, a part of which all of us indirectly bear.

Muscle training and rehabilitation probably require more knowledge in the fundamentals of physiology and anatomy than any part of physical medicine. Untold damage is done by the lack of this basic knowledge. Here we have definite proof of more overtreatment than faulty diagnosis. I venture to say this is a fair index of the average. We know that O_2 is necessary for life in general and the cell in particular. Able investigations have well proved the fact that we need no O_2 during muscle contractions, but a recovery period is necessary for its storage. When exercise has been prolonged into an oxygen debt it must be paid after the work has ceased. That important recovery period is the time of repayment. If more work is started before the end of this period, the oxygen debt is going to mount rapidly. As a result the lactic acid which normally appears in muscle contraction accumulates, which, if kept up, leads to rigor mortis of varying degrees. When this dangerous situation is reached glycogen disappears, being replaced by lactic acid, which finally may cause cessation of movement.

This danger holds forth in every muscle or muscle group undergoing training. Too rapid or prolonged contraction without sufficient recovery period is, in my mind, the chief cause of continued disability in countless cases.

Are not facts such as these Doctor Gocher presents here irrefutable arguments for the teaching of physical medicine in our medical school curriculum, and for the registration and control of technicians?

⁂

John Homer Woolsey, M. D. (490 Post Street, San Francisco).—An understanding of individual muscle training, as outlined by Doctor Gocher, cannot be appreciated without observing a demonstration of the manner in which it should be carried out and the relatively early and satisfactory result. I would emphasize three points illustrated in Doctor Gocher's paper: (1) Correct diagnosis as to the muscle or muscles concerned with the injury; (2) the knowledge of the true action of the individual muscle for the treatment aspect; and (3) the "recovery period" of the muscle in order to avoid overtreatment, which leads to additional injury. The author's statistics demonstrate the lack of attention given to these three important points in physiotherapy by a great number of the medical fraternity.

Physiotherapy, in my opinion, demands special and constant study. It is still in the developmental period, and so its use is bringing out valuable points heretofore known to but a few. One will find the "Handbook of Physical Therapy," published by the American Medical Association, containing contributions by the leading physiotherapists of our country, a worthwhile text. This text supports strongly the points that have been made in this excellent contribution by Doctor Gocher.

⁂

Doctor Gocher (Closing).—I wish to thank Doctors Behneman and Woolsey for their discussion of my paper. I have attempted to give a stimulus to this subject of muscle training, and believe that if more attention is paid to this important study there will be less disabilities and the economic loss of the worker will be minimized. Up to the present time I believe too much attention has been given to the "mass" muscle training and the "individual" muscle has been slighted. It is my hope that in the future more attention will be given to this important study; and if this is done I feel certain that the results obtained will be gratifying.

REFRACTION*

IS IT A MEDICAL OR A NONMEDICAL PROBLEM?

By T. W. Kelsey, M. D.
Sacramento

Discussion *by Dewey R. Powell, M. D., Stockton; M. N. Beigelman, M. D., Los Angeles; Joseph L. McCool, M. D., San Francisco.*

When one considers the great advance that scientific medicine has made during the present era, and the large amount of positive knowledge which has become available through laboratory research and otherwise, it is amazing that the profession still finds it necessary to defend definitely proved facts against the unscientific theories of disease which are forever being promulgated by quacks, cults, and others. If it were not, however, for the gullibility of mankind and the wonderful power of advertising, this condition might not prevail; but Barnum was right, and through advertising one can sell anything, regardless of merit, be it ideas, service or merchandise.

LAY PRESS MISINFORMATION

At the present time the public is being fairly deluged with misinformation regarding health and disease through the magazine, the newspaper, and the radio by those who seek to promote their fantastic claims to cure the sick by means of diet, mental suggestion, physical culture, spinal adjustments, drugless methods, etc.

Because of this, together with the fact that the medical profession does not advertise, the public is unable to know who's who in the treatment of disease, the result being that anyone who has a pleasing personality and a good press agent always gets a following regardless of qualifications and previous training for the work he is doing. Cults have thus arisen in competition with every branch of scientific medicine.

This is especially true so far as ophthalmology is concerned. The time was when everyone consulted an ophthalmologist when he had anything wrong with his eyes. Not so today. During recent years, ophthalmologists, through no fault of their own, have found themselves many times to be in direct competition with department stores and a large commercial group who designate themselves by various names, such as refracting optician, optometrist, optical specialist, doctor of optics, etc. Not being a part of the medical profession, this latter group has resorted to newspaper advertisements and other publicity methods which ethical physicians have steadfastly refused to employ. By reason of this they have not only made decided inroads into the legitimate field of ophthalmology, but they have also caused many people to believe that refraction is purely a mechanical procedure and not necessarily a medical problem.

REFRACTION A MEDICAL PROBLEM

In this paper I shall endeavor to prove that refraction is a medical problem in all cases and should be entrusted only to the medical eye specialist.

To begin with there are many local eye diseases and many local eye manifestations of general diseases elsewhere in the body that may be responsible for the eye symptoms of which patients complain. If the one consulted has not had the background of a medical education he is in no position either to diagnose the condition or prescribe the right treatment for the patient.

Of the local eye conditions, mention must be made of all diseases of the lids, lachrymal apparatus, eye muscles, conjunctiva, and cornea externally, while internally one frequently finds some disease of the iris, lens, ciliary body, retina, choroid, optic nerve and vitreous, to be responsible for the symptoms.

Of general diseases with eye manifestation, there are so many that it would be difficult to enumerate them all. The most prominent of these, however, are syphilis, tuberculosis, nephritis, diabetes, arteriosclerosis, brain tumor, and focal infections. In fact there is no other organ in the body that is subject to so many diseases, both local and general, as is the eye.

If for no other reason than the one just mentioned, all eye conditions should be cared for only by medical specialists. Also, when one's vision begins to fail or other eye symptoms, such as headache, develop, the patient is unable to judge whether the symptoms of which he complains is the result of a refractive error or some local or general disease. This being true, the patient should at least consult someone who is familiar with both refraction and diseases of the eye, as well as diseases in general, if he would do the best thing for himself.

For the sake of argument let us assume that the symptoms of which the patient complains are the result of a refractive error and that glasses are needed to correct the difficulty. Whom should he consult? That he should consult an ophthalmologist for refractive errors is just as reasonable as it would be that he should call in a surgeon and not a splint or brace maker to set a broken leg.

---

* Read before the Eye, Ear, Nose and Throat Section of the California Medical Association, at the sixty-first annual session, Pasadena, May 2-5, 1932.

METHODS OF REFRACTION

In discussing this phase of the subject let us review the methods of refraction employed by both the medical and the nonmedical groups. In doing so I shall endeavor to be absolutely fair, and shall also refrain from technicalities as far as possible.

To begin with, every refractionist in both groups must have certain basic instruments and appliances with which to work. Of these there is a large variety upon the market, and all have the privilege of purchasing any or all of them as they see fit. In this regard both groups are equal. Not so with the methods of making examinations.

In order to measure accurately visual defects, ophthalmologists are not only privileged to use all the methods of the nonmedical refractionists but also many other very valuable procedures which, because of their medical nature, the other group is not allowed to employ. This gives ophthalmologists a decided advantage. The basic difference between the methods employed by the two groups lies principally in the manner in which each attempt to control the action of the ciliary muscle, which is the muscle of accommodation within the eye, during the period of the examination. There are other differences, however, which will appear later.

There is a principle recognized by all refractionists, both medical and otherwise, that relaxation of this muscle is necessary before it is possible to measure accurately the refractive error. To secure this relaxation the nonmedical refractionists are not permitted to put any medicine in the eyes of their patients for the purpose, much to their sorrow, and are forced to depend entirely upon the mechanical measure known as the "fogging method" in all cases.

It is only fair to say that the "fogging method" is the best known substitute for the use of "drops" and is quite satisfactory for most older patients, but is not to be depended upon when the patient happens to be a child or a young adult. I shall not enter into any detailed description of the ciliary muscle except to say that it is circular in shape and surrounds the crystalline lens within the eye. Through its ability to contract and relax, the shape of the lens is thus changed, with the result that its refractive power is increased or diminished as necessity demands, in order that rays of light entering the eye from any and all distances may be properly focused upon the retina. The difference between extreme contraction and extreme relaxation of this muscle, together with the resultant changes in the refracting power of the crystalline lens, is known as the power or amplitude of accommodation.

At this point it may be permissible to call attention to a table which shows the average amount of accommodation there is in all normal eyes at each five-year period between the ages of ten and sixty years (Table 1). The amplitudes are expressed in diopters, which is the unit of measure of lenses.

Table 1.—*Accommodation in the Eyes at Different Ages* [1]

Age	Amplitude	Age	Amplitude
10	14.0 D.	40	4.5 D.
15	12.0 D.	45	3.5 D.
20	10.0 D.	50	2.5 D.
25	8.5 D.	55	1.75 D.
30	7.0 D.	60	1.00 D.
35	5.5 D.		

From a careful study of these figures it is apparent that the eye possesses a very large amount of accommodative ability during the earlier years of life. It is also apparent that the eye loses this ability to accommodate at the rate of approximately a quarter of a diopter each year from youth to old age, when there is very little, if any, accommodation left.

HOW AGE FACTOR INFLUENCES REFRACTION METHODS

These varying amounts of accommodation at different ages are due to the fact that the crystalline lens has a tendency to become harder and harder as we grow older, thus interfering with the sphincteric action of the ciliary muscle in its attempt to change the shape of the lens and consequently its index of refraction. On account of this phenomenon of accommodation in all eyes, ophthalmologists very properly divide refraction cases into two more or less distinct groups, depending principally on the age of the patient. They also modify their technique of examination accordingly to suit the needs of those in each group.

Group 1 consists usually of those patients who have passed the age of forty-five or fifty years in which the power of accommodation has become quite reduced, as shown by the table presented. Due to the fact that there is such a small amount of accommodation left in the eyes of the patients of this group, ophthalmologists are usually able to fit them satisfactorily with glasses without the aid of a cycloplegic. By cycloplegics is meant those drugs such as atropin, homatropin, scopolamin, and hyoscin, which, when dropped into the eyes in proper solution, will not only dilate the pupils, but will also temporarily suspend all action of the ciliary muscle for the purpose of accurately measuring refractive errors.

In Group 2 there is presented an entirely different picture from the one in Group 1. These patients are usually under forty-five years of age and possess large amounts of accommodation, ranging from 14 diopters at age 10, to 3.50 diopters at age 45 (see table). Because of this extra amount of accommodation in the eyes of all patients in this younger group, which must be overcome before accurate measurement of their refractive errors becomes possible, ophthalmologists find it advisable to modify their technique from that which they find to be adequate for the older patients. In order temporarily to suspend all muscular activity within the eyes of these younger patients, for purposes of refraction, ophthalmologists have always used cycloplegics, provided the patient does not have glaucoma. In that event their use is contraindicated. They employ these drugs when measuring the eyes of this younger group of patients for glasses, for the good and sufficient reason that there is no other method yet devised that is so reliable in all cases. By their use there is also the added advantage of being thereby enabled to employ the valuable objective test known as static retinoscopy in addition to the subjective examination in which the patient reads the letters on a chart at twenty feet distant. Static retinoscopy is also known as skioscopy, skiametry and the shadow test, and is distinctly a medical procedure in that it is of value only after the powers of accommodation have been temporarily suspended by the use of "drops" in the eyes.

RETINOSCOPY

In this connection it should be mentioned that about the year 1890 Andrew J. Cross of New York City evolved a theory known as dynamic skiametry,[2] which has as its purpose an objective means of measuring the refraction of the eye by the shadow test with the ciliary muscle in contraction, *i. e.,* with some of the accommodation in force. At best this is only a poor substitute for the shadow test as used by ophthalmologists, and has never been generally accepted and adopted by the nonmedical refractionists for whom it was originated. On the other hand, static retinoscopy is a method that has been universally accepted and used by ophthalmologists for many years. Its value is twofold:

First, it furnishes a most excellent and accurate objective method of refraction. This is especially useful in the case of young children and illiterates who are unable to make intelligent responses to the subjective test.

Second, it supplies a reliable objective test with which to check the subjective findings in all cases, regardless of the age or intelligence of the patient.

OPHTHALMOSCOPY

Another fundamental reason why refraction is a medical rather than a nonmedical problem is that no examination of a patient's eyes is complete until a thorough ophthalmoscopic examination has been made. This is due to the fact, as already stated, that many times the eye symptoms of which patients complain are the result of some local or constitutional disease.

In order then thoroughly to inspect the interior of the patient's eyes with an ophthalmoscope, especially in the presence of pathology, it many times becomes necessary first to dilate their pupils with a mydriatic. This is a medical procedure, and not within the province of nonmedical refractionists.

Furthermore, if the ophthalmoscopic findings are to be accurately interpreted and appropriate treatment prescribed, a general medical education, together with a special training in ophthalmology, becomes a necessity.

Much more might be said on this subject, but sufficient has already been presented to prove that refraction is necessarily a medical problem if the best interest of the patient is to be conserved.

810 Forum Building.

REFERENCES

1. Thorington, James: Methods of Refraction, p. 108. P. Blakiston's Sons & Co., 1916.

2. Atkinson and Woll: Dynamic Skiametry. The Professional Press, Inc., 1928.

DISCUSSION

Dewey R. Powell, M. D. (Medico-Dental Building, Stockton).—I feel that there can be no argument as to the accuracy of Doctor Kelsey's conclusion that refraction is logically and definitely a medical problem. Certainly no one will dispute the advantage of a mydriatic in retinoscopy of patients under 40, and the value of a dilated pupil in detailed fundus examinations. It is also common knowledge that many symptoms referable to the eyes are but part of the picture of a condition either ocular or systemic that requires a medical training to recognize and appreciate. We could all cite case histories similar to that given by the lady who consulted me last week very much disturbed because her new $20 glasses prescribed by a leading optician three weeks before had not stopped the watering of the right eye. The lenses, which, by the way, were plus 0.25 cylinder, had not helped an obstructed lachrymal duct, but the optician had collected the $20 and the patient had nothing left with which to pay the oculist.

The important problem for us to consider is why do so many laymen think the optician competent to handle their refraction problems instead of immediately associating the oculist with their glass needs. The foremost reason has been mentioned by Doctor Kelsey—the power of advertising. A few days ago the district manager of a large manufacturing and wholesale optical house was in my office and showed me plans and illustrations and text of an advertising campaign for the next few months to cost over $500,000 and using current periodicals with a total circulation of 15,000,000. Many millions of readers will have every opportunity to learn the advantages of fulvue frames and lenses. Local optical houses with newspaper and radio advertising will capitalize on this national campaign by informing the public early and often that they are the ones to solve their spectacle needs in their respective localities in the most accurate and up-to-date fashion.

Another reason is the fear of added expense and the wish to get desired results by securing examination and merchandise from one person or firm. I believe that the oculists are partly responsible for this fear from two standpoints. First, complacent in their attitude of smug superiority the fees of a considerable number of oculists have been too large, and secondly, too often a prescription has been given without consideration or discussion of the style of frames, and as a result the optician's bill has been often unnecessarily great. In combining the two costs, the pocketbook has been hurt, and the resultant wail heard by relatives and friends prompts them to seek less expensive and more direct service.

Should we control the style and price of glasses given those patients who do consult us by dispensing their glasses directly from the wholesaler to the patient in our own office? I appreciate that this is a debatable point, but in conclusion I shall state my personal opinion. After insisting for eighteen years that the oculist should have no part in the merchandising of lenses and watching during those years any number of patients return to the optician for a check-up or re-examination instead of coming back to me, and after noting how many patients paid for lenses and forgot to pay for their examination, we have in our office the past year supplied our patients directly from the wholesaler excepting in those instances where they specifically requested a prescription. The result to date has been more satisfactory to both patients and ourselves.

⁂

M. N. Beigelman, M. D. (1930 Wilshire Boulevard, Los Angeles).—I fully agree with Doctor Kelsey that in some groups of cases the use of mydriatics is most essential for an accurate estimation of the refractive error. It is also true that in progressive myopia we are dealing not only with a refractive error but with distinct pathologic changes in the anatomic structures of the eyeball as well. Perhaps it would be unnecessary to consider this side of the question if we realize that the very decision as to whether a case is "refractive" or "pathologic" constitutes in itself a medical problem and must be in the hands of an eye physician.

When the patient comes to the conclusion that he needs glasses or that he must change the old ones, he does it because of some discomfort or some visual impairment. It goes without saying that the patient may be wrong and that his subjective symptoms are due to some organic lesion—from a conjunctival congestion to a brain tumor. Is the "refractionist" competent to make this diagnosis, particularly in the incipient stages? Let us admit that even to the eye physician with all his medical training and his daily attention to pathologic conditions, the matter of early diagnosis is not always a simple or easy task. How this feat can be expected from a "refractionist" is beyond one's comprehension.

One more point, not of a purely utilitarian nature. It is only in the last ten to fifteen years that the problem of refraction as a whole has come out of the limits of physical and physiologic optics. Through the efforts of Steiger and a host of his followers (Tron, Sheerer, Kraupa, Kronfeld) the broader biologic concepts of refraction have come into existence. The principles of variation, selection, and heredity have been applied for the first time to the study of refraction with most gratifying results. It would be a pity to turn over the domain of refraction to men whose educational background is inadequate for any other conception of our refractive problem than that of "fitting glasses."

⁂

Joseph L. McCool, M. D. (1319 Four-Fifty Sutter, San Francisco).—It was Mark Twain, I believe, who once made the statement that we humans like to do our own thinking concerning the welfare of our bodies and the future of our souls. With respect to the latter, we at once enter the realm of pure speculation and from the number of creeds and religions, one has a wide variety from which to choose. Our aches and pains, however, are with us always, and it is not at all surprising that we seek relief where it may be found.

We must not forget that, in spite of the enormous advances which medicine and surgery have made in recent years, it was not so long ago, as time is measured in the life span of the human race, that there was much of imperiousness and superstition in the healing art. Great as has been our progress toward scientific truth in medicine, we sometimes lose sight of the fact that there is a great difference between our viewpoint and that of those whom we seek to cure.

We try to approach the recognition and cure of disease in an orderly, logical and scientific manner, while the patient, with but few exceptions, is interested only in getting relief and not at all in how it is done, so long as it is done quickly and effectively.

It is not surprising, therefore, that we have the ever-present cults, pathies, and isms with which to contend. The ranks of these irregular offshoots from scientific medicine are filled with incompetent, poorly educated, misguided, if not dishonest, individuals who seek to capitalize and prey upon the physical and mental ills of the public.

Deplorable as the situation is, from the standpoint of the public welfare, the medical profession is to a certain degree responsible for the birth and continued existence of many of these cults because we fail to recognize that the practice of medicine is more of an art than a science.

Patients consult us for relief and they expect us to use every therapeutic measure at our command to that end. Too often they are of interest to us only until the diagnosis is established and then dismissed with a prescription, a few words of not very specific advice, and the next patient is ushered into our consulting room.

Ophthalmologists are not the least of the offenders in this respect, but theirs is rather one of omission than of commission and it is because of this that papers like Doctor Kelsey's are presented to our societies.

It seems to be a rather sad commentary upon modern medicine for anyone to be obliged to ask the question, "Is refraction a medical or nonmedical problem?" Would it not be just as absurd to ask the same question about roentgenology because there are lay x-ray laboratories, or about obstetrics because a large proportion of pregnant women are delivered by midwives, or about orthopedics because part of their work is of a mechanical nature? These examples will suffice.

The ophthalmologist uses physics, geometry, trigonometry, and physiological optics in estimating the refraction and motility of the eyes. By any stretch of the imagination could one consider, therefore, that he was dealing with an inanimate structure rather than with a vital organ intimately connected with the brain and nervous system?

It always has been, and shall continue to be, my firm conviction that refraction and the anomalies of the ocular muscles are as much a part of ophthalmology as the surgery and diseases of the eye. Certainly one would not consider these as nonmedical subjects.

There are ophthalmologists throughout this country and abroad who feel that refraction is purely a technical problem and delegate it to a lay assistant. I respect their viewpoint, but cannot understand it or subscribe to it.

There are others who by preference, or because of a large surgical and consulting practice, do very little refraction themselves. This is delegated to a young ophthalmologist in their office or sent to other young colleagues.

Finally, by far the largest group is composed of ophthalmologists who are compelled economically to develop as large a refraction practice as they can.

In order that we may have a clear understanding of the problem under discussion, we should approach it from three angles: our own faults, the attitude of our professional colleagues toward ophthalmology, and public education.

If I were to be asked the most outstanding fault of which ophthalmologists were guilty, I should unhesitatingly say lack of appreciation of the importance of refraction and motor anomalies. There are several reasons for this: insufficient early training in these fundamental branches of ophthalmology which usually engenders a distaste for the work, with the result that it is either poorly done or turned over to an assistant. There are others whose interest lies in pathology and research work and whose time is so taken up with this type of work that they have little opportunity for what to them is the monotonous branch of ophthalmology. The same reason applies to those who, from choice or necessity, practice the combined specialties. Here lack of time rather than lack of interest is responsible for much superficial refraction.

The remedy lies with us. After having obtained their degrees in medicine and serving their internship, those who wish to specialize in ophthalmology should be impressed with the necessity for obtaining sufficient instruction in physics and physiologic optics so that they shall be able intelligently to master refraction and motor anomalies. Too much time devoted to physics and physiologic optics has a tendency, however, to overemphasize the physical rather than the physiologic aspect of the subject; on the other hand, too little makes it exceedingly difficult to grasp. Unless the student approaches the subject in this way he soon becomes engrossed in the study of the diseases and surgery of the eye—fascinating branches of our work, I admit, but hardly remunerative enough to enable him to meet his obligations in his early years of practice unless he has a private income.

With regard to the attitude of the profession toward ophthalmologists, let me say that I believe our relationship could be very greatly improved by frank discussions. I have been impressed with the fact that the principal criticisms our colleagues have to make are against our refraction, and an expense to the patient greater than he can afford.

Ophthalmologists everywhere recognize that to a certain extent this first criticism is justified. However, through their own efforts and with the help of the American Board of Ophthalmic Examinations the standard of practice in ophthalmology has been very materially raised and it will not be long before this criticism will cease to be founded on fact. With regard to the criticism concerning the total expense for the examination and glasses, I have no hesitancy in making the statement that within certain limits this is not in accordance with the facts.

In every community there are an adequate number of young ophthalmologists well trained in refraction and motor anomalies who would be only too glad to charge a fee for their examination commensurate with the financial limitation of the patient, having in mind the probable total outlay which the patient will be called upon to make. Under these circumstances the patient's total bill will be no higher than were he to have had the examination made by a nonmedical refractionist.

But what is more to the point he would have had his eyes examined by a physician thoroughly trained in physiology, anatomy, pathology, neurology, and internal medicine in addition to a thorough training in the correction of errors in refraction and motor imbalance.

The public should be educated to the difference between the physician who specializes in ophthalmology and the nonmedical refractionist.

The medical profession must assume and discharge this responsibility to the best of its ability.

⁂

Doctor Kelsey (Closing).—Those of us who have been initiated into the intricacies of ophthalmology, and have become acquainted with the intimate relationship existing between the eye and the rest of the body, need no further proof to convince us that refraction is a medical problem. On the other hand, it is not hard to understand how those who have not had the advantage of first-hand information on the subject, might hold refraction to be of only mechanical importance. Especially is this true since there has been so much misinformation and so little real information concerning refraction available to the average person. For many years the public has been the recipient of a large amount of commercialized discussion of the subject, while the professional aspect has been characterized, in most part, by a dignified silence.

In view of these facts, if any layman should arrive at an erroneous conclusion relative to refraction, he scarcely can be blamed. It would appear, then, to be the duty of ophthalmologists to use every legitimate means at their command in an attempt to acquaint the public with the difference between a medical and a nonmedical examination and refraction.

CALCIUM THERAPY IN UROLOGY*

By Henry A. R. Kreutzmann, M. D.
San Francisco

Discussion *by Franklin Farman, M. D., Los Angeles; Miley B. Wesson, M.D., San Francisco; Albert M. Meads, M. D., Oakland.*

THE importance of calcium as an essential constituent of the body and its value as a therapeutic agent has been recognized for only a comparatively short time. Particularly is this true in the field of urology, where its administration is of benefit in a number of unrelated pathologic conditions. Because there has been so much divergence in the results of experimental work on calcium and such discrepancy in the results obtained clinically, it is possible that few physicians have recognized the value of this drug in the field of medicine. Even at the present time, investigators are not in accord as to the amount of calcium normally present in the blood. The limits range from 8.8 milligrams per 100 cubic centimeters as determined by Jones, to 12.46 milligrams according to Lyman. The normal appears to be between nine and eleven milligrams per 100 cubic centimeters of blood.

METHODS OF ADMINISTRATION

Calcium may be given either orally, intravenously, or intramuscularly.

Oral Administration.—Most of the salts have a disagreeable taste and when given orally in sufficient amounts to be of benefit are irritating to the gastro-intestinal tract. For these reasons calcium lactate is most often used, although it possesses a lower calcium content. Recently calcium gluconate has been developed by Sandos. It is tasteless, comparatively nonirritating, and has been shown by Rothlin to be physiologically and pharmacologically equal to calcium chlorid. Cantarow believes it to be the most satisfactory product for routine use. The dose of calcium gluconate is sixty grains three or four times a day. The best time for administration is half an hour before meals or four hours after meals, when the alkalinity of the upper intestinal tract is lowest. With this dosage the serum calcium rises two to four milligrams above normal in one to two hours. It will remain above normal for six to eight hours.

Intravenous Administration.—For this purpose the chlorid or gluconate salts are most commonly used. The latter has the advantage of causing no irritation if accidentally injected into the tissues about the vein. The dose is 10 cubic centimeters of a 10 per cent solution of the chlorid and 10 to 20 cubic centimeters of a 10 per cent solution of the gluconate. The injection should be made slowly, as the patient will experience a severe burning sensation over the skin of the entire body, with some dyspnea. An increase of 80 to 100 per cent in the serum calcium concentration occurs within five minutes. The preinjection level is usually regained within two hours. Because of the rapidity of elimination the intravenous injection may be given several times a day without any harmful effects.

---

* Read before the Urology Section of the California Medical Association at the sixty-first annual session, Pasadena, May 2-5, 1932.

Intramuscular Administration.—Calcium gluconate is the only salt which will not produce any inflammatory reaction when given intramuscularly. The dose is 10 cubic centimeters of a 10 per cent solution. Observation shows a rise in the serum calcium within twenty minutes, gradually declining and reaching normal within six to eight hours.

THERAPEUTIC INDICATIONS

The various urological conditions in which we have used calcium with benefit are: acute epididymitis, acute salpingitis, incrusted cystitis, hemorrhage, and ureteral calculi.

ACUTE EPIDIDYMITIS

Gonorrheal infection of the epididymis was benefited by the use of calcium salts when the patients were seen at the onset of involvement. The earlier the treatment is begun the greater is the chance of aborting this condition. Our method has been to give an intravenous injection as soon as the diagnosis is made, followed in two hours by an intramuscular injection. The intramuscular injections are repeated every eight hours. If there is no improvement in two days this type of medication is stopped. Of course it is understood that, along with the calcium, other measures which have a definite value, such as support and heat, are also used. In a series of eighteen cases there was definite relief in seven. By relief is meant a decrease in the size of the testicle with freedom from pain. We feel that calcium therapy was of benefit, because the epididymis in each of these instances did not reach an extreme stage of swelling and subsided more rapidly than is usually the case.

ACUTE SALPINGITIS

Having obtained some success in the treatment of acute gonorrheal epididymitis, it was thought that the same may hold true for acute gonorrheal salpingitis. In this condition the diagnosis was never made as soon as in epididymitis. Most women do not remark about a vague lower abdominal pain. It is not until severe inflammation with pus formation has occurred that the diagnosis is made. For that reason in a series of twelve cases only two obtained any relief from pain. In these two patients, although the course of infection was greatly moderated, bimanual palpation showed the tubes to be thickened and tender to palpation.

In what way calcium acts in these acute infections is not definitely known. It may be due to marked leukocytosis, as Hamberger observed that calcium increases the ameboid movement of the phagocytes.

INCRUSTED CYSTITIS

Although calcium salts are not used directly, it appears that calcium metabolism in some way affects this condition. By using parathyroid extract the calcium content of the blood is increased. For some reason as yet unknown, this has a beneficial action in patients with incrusted cystitis. Redewell reports improvement also in leukoplakia and malakoplakia.

REPORT OF CASE

At present we have one patient in whom repair of a vesicovaginal fistula had been attempted four times, each time unsuccessfully. At last, closure had been effected years ago by closing the outlet of the vagina and incorporating this structure with the bladder. When seen in June, 1930, she complained of frequency, nocturia, and dysuria. The urine had the typical foul odor of an alkaline cystitis. Cystoscopy showed the whole surface of the artificial bladder, which did not contain normal mucous membrane, to be covered with grayish deposits of urinary salts. After two months of unsuccessful local treatments the incrustations were removed with a curette. Lactic acid was instilled into the bladder at intervals for two months. For the past fifteen months the only medication the patient has received has been occasional doses of parathyroid extract. At the present time she is free of all symptoms, the urine is normal, and there has been no redeposit of urinary salts. Just how much benefit has been derived from the parathyroid medication it is difficult to say. It must have some value, as a raw surface such as is present in this patient is certainly a fertile field for the deposit of urinary salts.

HEMORRHAGE

Since Wright first advocated calcium salts they have been used extensively for many different types of hemorrhage. Different authors claim varying results for the same condition. At present, however, it appears doubtful that any marked decrease in coagulation time can be obtained when calcium salts are given by mouth. To be of value they must be given either intravenously or intramuscularly. It has been shown that a single injection may result in a decrease in clotting time and a lessening in the tendency to bleed; whereas the prolonged maintenance of an elevated blood-calcium level will cause a secondary increase in coagulation time with greater bleeding. Calcium is of most value in the slow, oozing types of hemorrhage. Its use has been advocated in malignancy of the bladder and in hemorrhage following prostatectomy.

As a precautionary measure our prostatectomy patients receive an intramuscular injection of calcium gluconate one hour before going to surgery. This is repeated in eight hours if the bleeding appears excessive.

In cases of carcinoma of the bladder we have had no result, but have had to rely on other drugs to control the bleeding.

URETERAL CALCULI

Aub was one of the first to recognize the benefit of calcium chlorid to relieve colic of ureteral or renal origin. More recently Bauer, Salter, and Aub reëmphasized this fact. During the past eight months we have given calcium chlorid intravenously to thirty-two patients suffering from ureteral calculi. Some of them were treated during an attack of colic, whereas in others the stone was quiescent. Relief from pain was obtained in all but six cases. In nine of the remaining twenty-six cases the stone was passed without further cystoscopic manipulations. It is remarkable how quickly the pain will disappear after the injection. In some instances it was necessary to repeat the injections in several hours and again there was relief from pain. One patient who obtained no relief from large doses of morphin was freed from pain by the administration of calcium chlorid.

The most striking case in the series was that of a man of fifty-seven who had a left nephrectomy fifteen years previous for pyonephrosis with calculi. Three weeks before examination he had an attack of ureteral colic on the right side. X-rays showed two stones in the right ureter. On two different occasions it was impossible to pass a catheter or the smallest filiform beyond the stones, which were impacted 20 centimeters from the bladder. He was given one injection of calcium chlorid. The next afternoon he had a mild attack of colic which lasted two hours. Following the attack he recovered one stone. On taking an x-ray it was seen that the other stone had also been passed. It was then possible to insert a No. 6 whistle-tip catheter into the kidney pelvis without difficulty.

Just what the action of calcium is in these cases has not been demonstrated. Calcium is known to decrease the irritability of unstriated muscle. Perhaps it is this action which causes a relaxation of the spasm produced by the calculus and permits the stone to pass on. With this thought in mind we gave calcium intravenously to a number of patients who had severe pain following complete kidney investigation. This was done in the hope of decreasing the colic. In not one instance, however, was there any relief or diminution in the pain. This shows that the colic of a ureteral stone is not similar to that produced by ureteral catheterization.

CONCLUSIONS

Calcium is of benefit in cases of acute epididymitis, acute salpingitis, incrusted cystitis, prostatic hemorrhage, and ureteral calculi.

Calcium gluconate is the most satisfactory salt for routine use. This drug is best administered either intramuscularly or intravenously. When given intravenously it may be repeated in several hours without any ill effect.

2000 Van Ness Avenue.

DISCUSSION

Franklin Farman, M. D. (727 West Seventh Street, Los Angeles).—Calcium therapy is a very interesting subject and the amount of literature on the topic indicates the wide appeal it has made to physicians in treating disease. We are fortunate in having the record of Doctor Kreutzmann's experience presented here today as very few of us are making sufficient use of this valuable mineral agent.

The calcium salts, mainly the chlorids, gluconates and lactates, are well adapted to the relief of inflammatory conditions, especially in the acute stage, and it is a well established fact that they act, by stimulating phagocytosis, by decreasing exudative processes (outpouring of serum and reducing cell permeability), and by moderating nerve and muscle tissue irritability, thereby relieving pain and spasm. (This is the desired effect of the intravenous injection of calcium in cases of ureteral colic.)

Calcium is valuable in checking hemorrhage, especially of the capillary, oozing type which is frequent in inflamed parts, such as in inflammation associated with hypertrophy of the prostate. The presence of calcium is necessary for the proper reaction between thrombokinase and thrombogen.

In my own practice I have made use of the calcium salts (lactate, gluconate, carbonate, chlorid) usually in combination with sodium bicarbonate and magnesium salts as preliminary medication for prostatectomy and as accessory treatment in some cases of acute pyelitis and pyelonephritis. The use of the calcium salts alone, or in combination, given per mouth in sufficient dosage will increase the urinary output and aid in restoring the normal blood chemistry levels. The claim that the calcium salts are not well absorbed from the intestinal tract has been amply disproved by Baráth and the Pavlow school.

In conclusion, it may be said that calcium is present in all the tissues of the body and is a necessary physiological salt. The metabolism of calcium is in some manner intimately related to and dependent upon the secretion of the parathyroid gland and vitamin D. To a lesser degree it is allied with the activity of the anterior lobe of the pituitary gland.

*

Miley B. Wesson, M. D. (490 Post Street, San Francisco).—Doctor Kreutzmann's paper should be of particular interest to us, as the first man in the United States to use calcium therapy in urology was a member of this section.

Calcium chlorid intravenously has long been used in the treatment of paralysis agitans, tetany, epilepsy, chorea, chronic ulcerative toxemias, and slow coagulative hemorrhages. In studying the function of the calcium ion in the human body, scientists concluded that it (1) materially increased phagocytosis, (2) reduced inflammation of the tissues, and (3) increased tissue resistance against bacteria invasion.

E. Radnai of Budapest in 1922 reported that its use in two cases of epididymitis resulted in cessation of pain within a few hours and the disappearance of swelling within a few days. Dr. Alvin E. Cerf of San Francisco tried it on a series of seventeen ambulatory cases of gonorrheal epididymitis and in 1924 reported his results in the *Therapeutic Gazette*. The article apparently escaped general notice, for Campbell in 1927, in a review of three thousand cases treated at Bellevue Hospital, did not mention the use of calcium chlorid, nor did Wolbarst in 1927, nor Pelouze in 1928, in their books on gonococcus urethritis in the male. Livermore in 1929 in his book on gonorrhea reports that the use of calcium chlorid in his hand was disappointing. However, he used ten cubic centimeters of a one per cent solution, whereas Cerf advised ten cubic centimeters of a ten per cent solution.

Calcium chlorid is objectionable because of its extremely irritant effect. Immediately after the beginning of the injection there is a severe burning at the base of the tongue and then a wave of heat passes over the entire body, and this often persists for ten or fifteen minutes. Occasionally there is nausea, and again, rather severe shock and cyanosis. I had one patient who went into temporary coma, with a marked dilatation of the pupils and cessation of respiration for about a minute.

Several years ago calcium gluconate was offered to the profession. It is much better tolerated, is less toxic, and the only disagreeable effect is a temporary burning at the base of the tongue. Recently calcium glucose has appeared and is reputed to be more efficacious and less toxic than is calcium gluconate.

Calcium gluconate can be given by mouth, intravenously, and intramuscularly. It is tasteless, and for conditions where a mild and constant calcium effect is desired it may be given by mouth in doses of sixty grains three or four times a day—preferably after meals as there is then greater absorption and a more persistent effect. Excessively large doses diminish the amount of absorption by producing a diarrhea. Following oral administration, the blood serum calcium reaches a maximum in about an hour and remains high for about eight hours. The findings after intramuscular injections are practically the same, the maximum being reached in about one-half hour, and the rise persists for the same length of time as after oral administration. Hence, since the oral administration is just as effective as the intramuscular and avoids traumatism of tissues there is no justification for intramuscular injections. The fast method is the intravenous; the blood serum calcium reaches a maximum at once and falls to normal in two hours. The drug goes into the tissues and is there available as a protective factor.

The literature is beginning to be filled with enthusiastic reports of the effect of the use of calcium salts. Personally, for the past seven years I have used calcium chlorid or calcium gluconate empirically as a prophylactic in all cases of vasitis and epididymitis, and occasionally following urethral instrumentation.

I at least did the patients no harm. I may have aborted or cut short some of my cases. I do not know as I also used the other recognized forms of therapy. I have repeatedly given daily injections for two or three weeks for a tender globus minor. The epididymitis in most cases did not progress, neither did it suddenly subside and become painless as others report. Doctor Kreutzmann's results in the cases of renal colic are most interesting and instructive.

⁂

Albert M. Meads, M. D., (251 Moss Avenue, Oakland).—In a specialty where we tend to think in terms of surgery and active instrumental treatment, Doctor Kreutzmann's paper on calcium therapy is particularly welcome as it calls our attention once more to the possibilities of another means of treating certain symptoms that demand relief. I am one, at least, who has neglected the possibilities of calcium therapy as outlined in this instructive paper, as I have limited myself largely to the older methods of treatment, leaving calcium primarily for the treatment of hemorrhage or potential bleeders.

We have used calcium gluconate intravenously, but not frequently enough to draw any conclusions. The disagreeable sensation following immediately after its injection passes off within a few minutes, so that it seems to us the best drug for all around use, especially in the office. Although there is a question in the minds of some as to the efficacy of calcium in some of the diseases mentioned, this paper will have done much if it will make us keep calcium therapy in mind and give it a fair trial before condemning it.

CHRONIC PURULENT OTITIS MEDIA*

ITS TREATMENT WITH IODIN POWDER (SULZBERGER)

By Russell Fletcher, M. D.
San Francisco

Discussion *by J. D. Lewis, M. D., Santa Barbara; Frank A. Burton, M. D., San Diego; Robert C. Martin, M. D., San Francisco.*

In the June 1930 *Laryngoscope* Dr. M. D. Lederman of New York [1] wrote about his very satisfactory results in the treatment of chronic purulent otitis media with iodin powder. We have been using this form of treatment ever since and have had excellent results. In fact we are convinced, after using it in more than seventy-five patients, that it is the best aid in the treatment of these conditions at the present time. As there has been very little written on this subject other than articles by Doctor Lederman, and as it does not seem to be well known among many otologists, we felt that it was advisable to give this report.

Doctor Lederman's first article appeared in the November 1917 *Laryngoscope*.[2] In 1930 he said: "Since employing it I have not been obliged to resort to radical surgery in any case lacking indicative symptoms, no matter how chronic. Indications for such intervention must be distinct and urgent before resorting to such a drastic measure, with its attendant possibility of great loss in auditory function." Our experience has been very similar to Doctor Lederman's.

IODIN POWDER (SULZBERGER)

The following is a brief description of the iodin powder (Sulzberger). "It is an intimate association of iodin with boric acid, prepared by mixing iodin solution wth dry, finely powdered boric acid and evaporating the solvent so that free iodin is deposited on the powder and not in chemical combination. The action is due to the iodin, which, as the boric acid dissolves in the secretions, is liberated and penetrates deeply into the tissues. Due to the solubility of the boric acid in the secretions, it is completely dissolved in forty-eight hours and does not cake, which is a very valuable quality."

There have been several imitations or substitutes put on the market. We have not tried any of these because the original powder is very inexpensive.

TECHNIQUE OF TREATMENT

The technique of this treatment is extremely important. It could be described in one sentence: Thoroughly clean and dry the middle ear, and insufflate iodin powder. However, as the keynote to the success of the treatment is the very thorough cleaning of the entire middle ear cavity and its recesses, the above statement needs amplification. The longer we have used this treatment the more firmly we are convinced that its success is due, in a large part, to the very thorough cleaning of the middle ear cavity before insufflating the iodin powder. We believe the reason that a few otologists have not obtained good results has been because they did not realize the importance of thorough cleaning. We know that the very painstaking and thorough elimination of pus, débris, and mucus as demonstrated by Doctor Lederman would have cleared up certain failures previously treated, without the added use of the iodin powder.

"Irrigations are forbidden," according to Doctor Lederman, but we have used them occasionally to mechanically clean out the attic cavities or other inaccessible recesses. These irrigations were always followed by thorough drying. Granulation tissue and polypi are removed. All gross débris and pus is removed as completely as possible. This is most easily and efficiently accomplished with fine glass or metal suction tips. An excellent metal suction tip is easily made from an old hypodermic needle three inches long and sixteen to eighteen gauge. This is about the same size needle that is used to puncture the nasal antrum for irrigation. The sharp point is removed and the end is smoothed off with a file or stone. The end may be curved or bent at an angle so that you can reach all recesses of the cavity. Suction, which completely closes the external canal, is contraindicated.

---

* Read before the Eye, Ear, Nose and Throat Section of the California Medical Association at the sixty-first annual session, Pasadena, May 2-5, 1932.

After cleaning with the fine suction tips, the middle ear cavity is then thoroughly wiped out with fine wire, cotton-tipped applicators dipped in 50 to 95 per cent alcohol. It is best to start with about the 50 per cent alcohol and gradually increase the strength because of the burning which sometimes occurs. The cavity is then wiped out thoroughly with fine, dry cotton applicators. Very fine metal or wire applicators, which can be bent at the end, are the best to reach into all the recesses of the cavity.

It takes time, patience and care to clean a middle ear cavity thoroughly. The various recesses, which differ in every case, must be searched for and thoroughly cleaned. It is surprising to find how much space is concealed around behind the edges of a completely destroyed drum—below in the hypotympanum, anteriorly in the eustachian tube area, in the attic cavities, and in the cul-de-sac between adhesions which are often found.

After this thorough cleaning and drying of the ear, the iodin powder is blown into the middle ear. There are several insufflators on the market, any of which is satisfactory. We lost our patented insufflator about a year ago and since then have used the small "Asepto" glass syringe or pipette, No. 2031, which we find just as satisfactory. The pipette is filled by aspirating the powder into it. A sufficient amount of powder to fill the middle ear is blown in.

The number and frequency of treatments varies with each case, and depends upon the amount and type of discharge found at each visit. At first it may be advisable to have them report on several successive days, but very soon the time between treatments may be lengthened. Home treatments are neither necessary nor allowed.

CAUTIONS IN USE OF POWDER

There are one or two things to be watched for. Some patients are a little sensitive to the iodin powder and get a dermatitis of the canal from it. A little bland ointment applied to the canal after cleaning will usually prevent this. The weak powder rarely causes any dermatitis even in children. It is usually better to start with the weak powder at the first treatment, as sometimes the strong powder causes pain when blown into the ear. Yet we have used the strong powder from the beginning without any reaction. It may be necessary to use sterile five to ten per cent cocain solution before the insufflation of the powder, or in order to clean out the middle ear with applicators dipped in alcohol.

It is very important to keep the powder in small dark bottles with ground glass stoppers, as the iodin is freely given off when exposed to the air. There is a strong smell of iodin when the cork is taken from the bottle. The powder blower or atomizer is, therefore, not suitable to keep the powder in, as it is freely exposed to the air and in a few days loses its color and odor of iodin. Fresh powder should be taken each time from the bottle and insufflated. Some time ago I talked with a colleague who was using it in one of the clinics. His clinic had not obtained very good results from it, but he said they had kept it in a powder blower, which I believe was one of the reasons for not getting better results.

RESULTS IN PATIENTS TREATED

We have used this treatment on seventy-six private cases of chronic discharging ears. There were fifty-four patients with chronic purulent otitis media who had not had a radical mastoid operation, and twenty-two patients who had had a radical mastoid in the past but whose ears had not healed up or had discharged intermittently since operation. The ages ranged from three to fifty-eight years, and the ears had been discharging from two to forty years. Of these patients twenty-four had foul pus, seventeen had granulation or polypoidal tissue, and three had definite cholesteatoma. Twelve had previously been advised to have a mastoid operation. The average length of time to dry these cases was a little over three weeks, and the average number of treatments was only six. The ears in all of the fifty-four patients have been definitely dried, except the following ten patients. Two cases discontinued treatment after seven treatments or less; three patients, all improved, are under treatment; on two patients a radical mastoid operation had to be performed. Three patients have not responded to intensive iodin powder treatment or any other treatment that was tried.

There is another large group of chronic discharging ears that sometimes is difficult to treat and dry up. This group includes patients who have had a radical mastoid some time in the past and a discharging ear practically ever since, or an ear subject to frequent exacerbations. We have had twenty-two cases of this kind. The average number of treatments before they were dry was four. Only two of these required more than six treatments.

It is our impression that iodin powder is more effective in drying up these old radical mastoid cavities than the other medicines we have used.

CONCLUSIONS

After using iodin powder for almost two years we believe that it is the best treatment for chronic running ears at the present time. It is not a cure-all. The term "cure" for a chronic running ear expresses too much, as such an ear may be subject to frequent exacerbations. The term "dry" is much better and means that probably the dangerous infectious process in the ear is arrested at least while it is dry. Cases with large cavities must be watched frequently as a dangerous process may be going on without visible discharge and indications may arise at any time for doing a radical mastoid operation. However, there are very few cases of chronic purulent otitis media, provided there are no signs or symptoms of intracranial or labyrinthine complications, which cannot be dried up with careful treatment with iodin powder, without operation. Several patients with cholesteatoma or other signs of complications, whom we strongly advised to have a radical mastoidectomy, refused operation and we were frequently surprised to obtain a dry, quiet ear by continuing the iodin powder treatment. It is far more satisfactory to the patient to have a dry ear without operation than to have the ordeal of the operation and its probable accompanying loss of auditory function, together with the possibility of not having a permanently dry ear after the best operation obtainable.

490 Post Street.

REFERENCES

1. Lederman, M. D.: The Nonsurgical Dry Treatment of Chronic Suppurative Otitis with Iodin Powder (Sulzberger), Laryngoscope, 40:397-417 (June), 1930.

2. Lederman, M. D.: Clinical Observations of New Iodin Preparation, "Iodosan," Laryngoscope, 27:800-804 (Nov.), 1917.

DISCUSSION

J. D. Lewis, M. D. (1534 State Street, Santa Barbara).—Despite the several articles which have appeared in our special literature recording the excellent results obtained by the use of the iodin powder (Sulzberger) in the treatment of chronic purulent otitis media, comparatively few otologists are employing this type of treatment. Doctor Fletcher's paper on this subject will surely claim your interest and doubtless add to the increasing popularity of this highly efficient therapy. Hitherto, as we well know, medicinal treatment of otorrhea has been extremely disappointing, and this also applies to surgical procedure for the relief of this prevalent disease.

I wish to add confirmatory data to Doctor Fletcher's results. My experience with iodin powder (Sulzberger) in the treatment of chronic aural suppuration covers a period of three years, comprising a series of 107 cases in private and clinical practice. There were forty-one males and sixty-six females, ranging in age from six months to seventy-two years—average, thirty-two years. Duration of the disease varied from two months to fifty-two years; one ear had been discharging for forty-seven years, and two for a period of fifty years. Average: males, eleven years; females, eight years. Approximate number of treatments required to cause cessation of the discharge ranged from 5 to 120, averaging nineteen treatments. Twelve patients had recurrences, in ten of which the ears subsequently dried. Only eight patients in my series of 107 have not yielded to the iodin powder treatment—truly remarkable results, indeed, almost incredible. When perforations of the tympanic membrane are small, response is markedly slower or negative. In all the cases due to scarlet fever, the response was prompt and permanent.

Seemingly, the results obtainable with iodin powder (Sulzberger) in the treatment of chronic purulent otitis media is a conspicuous achievement in otologic therapy.

⁂

Frank A. Burton, M. D. (1206 Bank of America Building, San Diego).—For about one year I have employed the iodin powder (Sulzberger), after the technique of Doctor Lederman, in chronic purulent otitis media. My experience with this treatment in both private and clinic practice involves a smaller series of cases than that of Doctor Fletcher. My results with this special therapy have been gratifying, but I fear that I have succeeded in a smaller percentage of my cases. It is probable that not more than 80 or 85 per cent of the chronic purulent otitis media ears which I have treated with the powder have become dry, and several of those have been reinfected by head colds or through diving.

It is my impression that when chronic discharging ears become dry the patient should be warned against taking unnecessary chances of his middle ears becoming reinfected through colds or getting water in them. And that if reinfection from either of these or from any other cause does take place, that he should, without delay, have a treatment or two with the iodin powder (Sulzberger) by the Lederman technique. Delay is dangerous and expensive.

Among the patients whom I have treated with the iodin powder there were two especially sensitive to iodin and they were made much worse by the treatment. Each one of these two cases had previously undergone a radical mastoidectomy and the mastoid trough in each case had continued to discharge. In one case the radical had been done about five years previously. And the other operation was performed about twenty years before, but had continued to discharge. In the latter case, so great was the sensitivity to iodin that distressing pain, swelling, inflammation, and profuse watery discharge followed promptly the administration of the powder, despite the careful painting of the auditory canal with ointment prior to blowing in the powder. In both cases, despite using the weakest Sulzberger iodin powder, the treatment had to be discontinued.

In several of my chronic purulent otitis media cases radical mastoidectomy had been urgently advised previous to trying this therapy. And it came about that the surgery was unnecessary. One case which failed to respond satisfactorily to the powder proved to be cholesteotomatous and a radical mastoidectomy was performed. In this case the iodin powder helped in drying up a stubborn discharge in the combined middle ear and mastoid cavity.

It is my impression that radical mastoid troughs would dry more promptly if the iodin powder were used routinely as part of the postoperative treatment.

Watery discharge from the middle ear and from the external auditory canal also respond nicely to the iodin powder therapy. I include the so-called "weeping eczema" or "moist eczema," always using the weakest Sulzberger powder, and noting previously the absence of active dermatitis of the auditory canal or of the auricle.

The points emphasized by Doctor Fletcher cannot be too deeply borne in mind, viz., (*a*) thorough cleansing, including the middle ear cavity with all its recesses, and the eustachian tube; (*b*) apply alcohol; (*c*) thoroughly dry, then blow in a liberal amount of the iodin powder (Sulzberger).

For two reasons it is hoped that more otologists will soon employ this valuable therapy in the treatment of their cases of chronic purulent otitis media:

1. Radical mastoidectomies do not always dry discharging ears. Try iodin powder (Sulzberger) first, and use Doctor Lederman's technique.

2. Radical mastoidectomies often reduce the acuity of the hearing. The use of the iodin powder (Sulzberger) does no harm.

⁂

Robert C. Martin, M. D. (384 Post Street, San Francisco).—We began using the boric iodin powder (Sulzberger) about three years ago after talking to Doctor Lederman of the good results obtained in selected cases.

It is of value in those patients who have sufficiently large perforations to permit drying and cleaning and to assure there will be no blocking by caking of the powder, which sometimes occurs.

Several obstinate cases of delayed healing after radical mastoidectomy cleared up promptly on removal of exuberant granulations and insufflation of the powder.

It is a distinct addition to the treatment of chronic purulent otitis media.

THE ADENOMATOUS GOITER*

A CLINICAL STUDY

By W. P. Kroger, M. D.
Los Angeles

Discussion *by H. H. Searls, M. D., San Francisco; Clarence G. Toland, M. D., Los Angeles; William E. Costolow, M. D., Los Angeles.*

The adenomatous goiter has been a subject for controversy among clinicians and pathologists for thirty years. Opinions concerning its etiology and pathology have fluctuated widely, resulting in two distinct divergent groups. One group believes adenomas to be a stage in the development of colloid or hyperplastic goiters, and the other maintains that adenomas are a new growth or pathologic process superimposed upon a preëxisting simple goiter. Neither group seems able to satisfactorily complete the chain of evidence supporting its views. The present opinion of the majority of authorities, especially in the United States, tends to favor the theory that the common type of adenoma is not a true tumor formation, but is the product of proliferative and hyperplastic changes in simple or hyperplastic goiters.[1]

MECHANISM OF GOITER CHANGES

The mechanism of these changes has been explained in various ways. One of the most interesting of these is Rienhoff's involutional theory.[2] He asserted that the hyperplastic thyroid gland, or even the normal gland, was subject to a process of involution somewhat analogous to the regressive changes that take place in the breast, the ovary, and the uterus. This involution occurred spontaneously or was induced artificially, as when iodin was being administered. He confirmed his views by removing and examining sections from the thyroids of seven patients before, during, and after treatment with iodin. Involution or reversion to a resting or normal state could be demonstrated in all cases, coinciding with the clinical improvement noted; but he observed that in certain areas of the glands the process varied in degree. Where there was an extreme degree of involution (hyperinvolution) an excessive amount of colloid was deposited, producing an enlargement of the area, showing grossly as nodules on the surface of the gland. An extension of this process and repetitions over a period of months or years, as observed in spontaneous involution, would result in degenerations and possibly cysts, thus forming the adenomatous goiter. The capsules of these adenomas were produced by the expansion and pressure of the colloid exerted against the normal fibrous tissue stroma of the gland.

Clinical observations will tend, in a measure, to support these views. Frequently patients with smooth symmetrical hyperplastic goiters, while receiving a course of iodin preliminary to operation, will complain of their goiter becoming more obvious and irregular in outline. Examination will show their thyroid glands to be larger, more firm, and somewhat nodular. Most likely if an operation did not intervene and this process were to continue, a so-called adenomatous type would result.

About the fetal adenomas, which form about 15 per cent of all adenomas, there is little diversity of opinion. They are definitely classed as true benign neoplasms. Their genesis is not certain, but it is generally accepted that they arise from the interstitial cell rests of Wölfler.

EFFECTS OF IODIN

Ten years ago Plummer first began the extensive use of iodin in the treatment of goiter. Beyond question this has been one of the major therapeutic advances of the past decade and has proved to be the most important single factor in the control of goiter. The treatment could well be called the "Plummer treatment." As a result the use of iodin has become so popular, particularly through the use of iodized salt, that literally millions of people use it every day.

A few years ago the indiscriminate use of iodin in goiter was considered highly dangerous. The chief danger was the production of an iodin hyperthyroidism, or of converting a nontoxic goiter into a toxic one. This was considered to be especially true of the adenomas. For a time the consensus of opinion was never to give iodin to these patients. Gradually investigators have discovered these fears to be greatly exaggerated, until at the present time very many clinicians prescribe iodin to toxic adenomas and exophthalmic goiter patients with equal assurance. There are still a few who firmly persist in the earlier views and it may be entirely possible that in some localities iodin affects the thyroid differently from the way it does in others.

In a survey of our case records of a thousand patients with goiters of all types, there was only one case of true iodin hyperthyroidism. A few of the patients responded unfavorably to iodin, but this tendency was as prevalent among the exopthalmic types as among the toxic adenomas. Many patients with nontoxic adenomas who had taken iodin on their own initiative, reported no ill effects such as might be attributed to a toxic adenoma or an iodin hyperthyroidism.

The patients who reacted unfavorably to iodin usually noted gastric irritation, an aggravation of the thyrotoxic symptoms, and a sense of general discomfort.

Some patients showed little or no reaction to iodin. The metabolic rate remained relatively unchanged and there was no improvement in the clinical signs and symptoms. These we called iodin-fast. Usually this type had used iodin over a long period, but a few patients, who had never used iodin before and who were receiving iodin for the first time, belonged in this group.

---

* Read before the General Surgery Section of the California Medical Association at the sixty-first annual session, Pasadena, May 2–5, 1932.

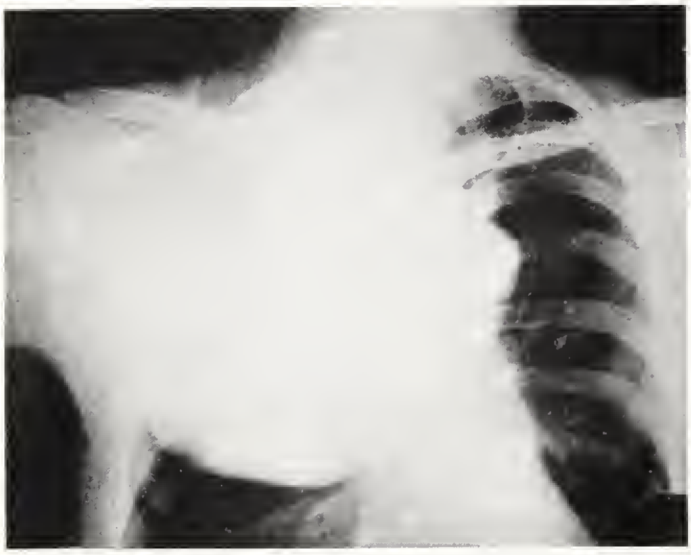


Fig. 1.—Roentgen-ray graph of a large intrathoracic goiter. Patient in good health.

EFFECTS OF RADIOTHERAPY

About 10 per cent of the toxic adenoma patients had received irradiation in varying amounts before coming to us. None of these were favorably influenced. In the recent literature[3] a few clinicians reported complete clinical cures following radiotherapy in toxic adenomas. Naturally, patients receiving benefit from radium or x-ray would not consult the surgeon; but our observations, based upon a considerable group of unimproved patients, some of whom had been treated by authorities in radiotherapeusis, leads us to deplore this method.

TOXIC ADENOMAS WITH HYPOTHYROIDISM AND HYPERTHYROIDISM

The popular conception of a toxic adenoma, from a clinical point of view, includes among other factors an increased basal metabolic rate. It is true this applies to the great majority of patients, but there are a certain definite few in whom there will be found a distinctly low metabolism.

In a recent analysis of two hundred cases of toxic adenomas we found fifteen patients, or about eight per cent, to be of this hypothyroid type. The metabolic rates varied from minus fifteen to minus twenty-three. In many respects the symptomatology paralleled that of the adenomas with increased metabolic rates, but there were definite essential differential features. Among these was a lessened tendency to weight loss; seven patients being considerably overweight. Their mental reactions were slow or confused and there seemed to be a general physical sluggishness.

These patients were given thyroid extract as a preoperative measure, and this was continued after thyroidectomy, until the residual gland had apparently attained its maximum recovery. It was assumed the adenoma produced a hypothyroidism by pressure upon the normal thyroid tissue as well as causing a toxemia from a secretion of its own.

All of this group were greatly improved one year after thyroidectomy, but it was noticeable the recovery period was very slow, and some patients required thyroid extract for more than the year.

This small group of cases presented the rather curious combination of hypothyroidism and symptoms simulating hyperthyroidism coexisting in the same individual. The hypothyroid features of these patients might lead one to hesitate before advocating a removal of the adenomas, fearing to still further impair the function of an already deficient gland. However, clinical end-results following a properly performed partial thyroidectomy, where an effort has been made to conserve normal thyroid tissue, does not tend to support this hypothesis. Not only is the patient relieved of the toxic adenoma with its attending disability, but the normal tissue, being relieved of pressure, tends in a measure to regenerate and approach the status of a normal gland.

The toxic adenomas with hyperthyroidism present an entirely different problem. Their symptomatology closely simulates that of the hyperplastic or exophthalmic goiter and it is frequently impossible to grossly differentiate a purely toxic adenoma from the so-called mixed type in which the normal thyroid gland has undergone hyperplasia.

Many of these patients seem to show pronounced toxic changes, especially damage to the cardiovascular system, making prolonged preoperative treatment essential. Unusual degrees of hypertension frequently occur and an operation may be more hazardous than in other types of goiter. The response to a subtotal thyroidectomy is relatively slow and the end-results at the one-year period often show a persistence of moderate toxic symptoms. In a recent study of cases of goiter with hypertension[4] it was shown that following thyroidectomy there was a greater tendency of the toxic adenomatous group to maintain an elevated blood pressure than was observed in the exophthalmic group. The explanation probably lies in the fact that the average toxic adenomatous patient is beyond forty years of age and the majority of these patients have had a goiter for many years before seeking surgical relief.

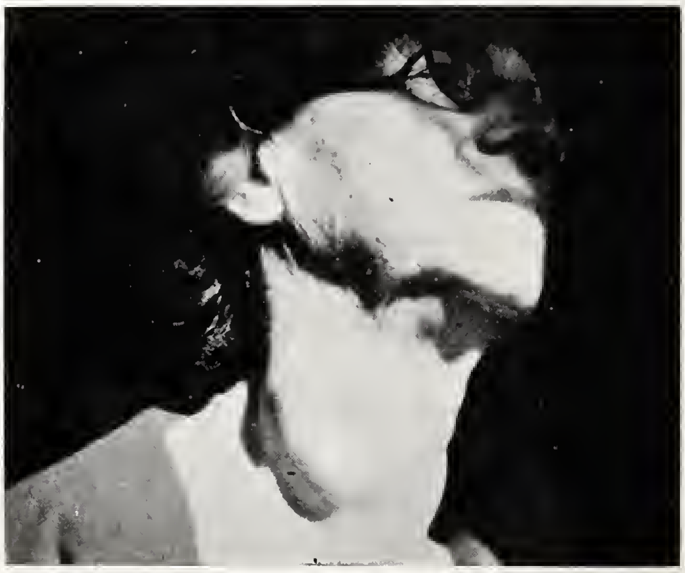


Fig. 2.—Case of malignant adenoma. Duration of malignancy three years. Vocal cord paralysis. Large mass extending into pharynx. Still living. Receiving radiotherapy.

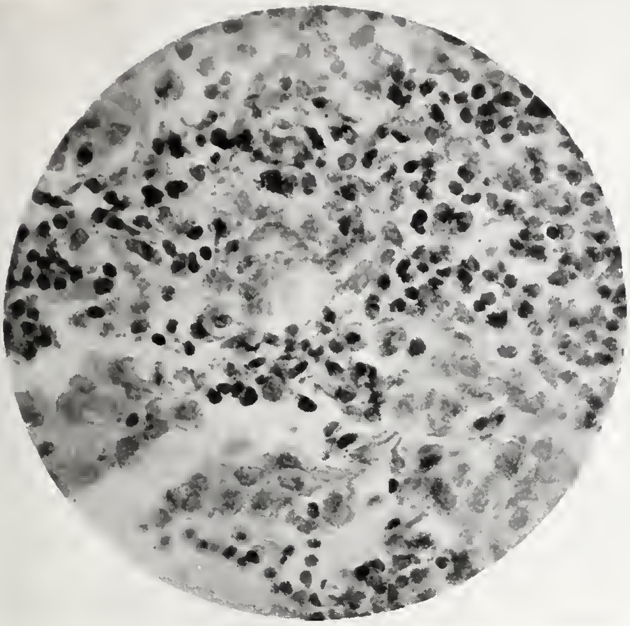


Fig. 3.—Photomicrograph of lymph node attached to malignant adenoma in nineteen-year-old girl. High power. Note metastatic cells invading lymph tissue.

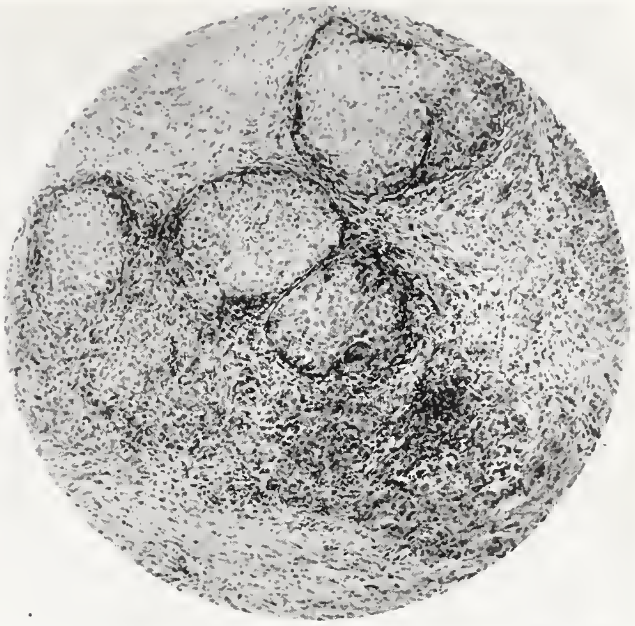


Fig. 4.—Photomicrograph of malignant adenoma in nineteen-year-old girl. Low power. Note invasion of the malignant cells into the fibrous tissue stroma.

The slow persistent thyrotoxicosis apparently produced a degree of permanent damage to the cardiovascular and nervous systems. It is very probable, too, that the secretion from a toxic adenoma is different from and more toxic than the secretion from exophthalmic or hyperplastic goiters. No method as yet has been devised to disprove or confirm this point.

ADENOMAS AND MALIGNANCY

In a consideration of thyroid enlargements the question of malignancy must be given some attention. This is especially true when the enlargement is nodular, denoting the presence of adenomas, for it is this type that is potentially malignant.

Some of the rarer malignant tumors, such as the sarcomas,[5] may develop in the normal thyroid gland, but the great majority of malignant goiters have their origin in a benign adenoma.

The fetal adenomas, being true tumors, have greater potentialities for malignancy than the other types; and it has been found [6] that 90 per cent of malignant goiters will show microscopic evidence of fetal adenomatous cells.

Clinical observations in these cases has revealed that in practically every patient the adenoma was clearly obvious for a period of one to thirty years preceding the malignant change.

A relatively rapid increase in the size of the goiter is the first intimation of a possible malignant development in many patients. Others first note symptoms of pressure or a vocal-cord paralysis. Few cases are definitely diagnosed prior to operation and microscopic examination.

Occasionally a sudden hemorrhage may occur into an adenoma, especially in an elderly arteriosclerotic individual. The enlargement and the reactive thyroiditis will produce a clinical picture almost exactly simulating a carcinoma.

It is an interesting and curious fact that a policy of procrastination is frequently advocated in cases of nontoxic adenomatous goiter. Perhaps the clinician does not realize that sooner or later this type of goiter will degenerate into the toxic variety. The course will be slow and it may be years before the patient will show symptoms of toxicity. It has been shown that the average length of time before an adenomatous goiter becomes toxic is about thirteen years.

In addition to the dangers of a slow insidious toxemia, causing more or less permanent damage to the nervous and cardiovascular systems, the patient with an apparently inactive adenoma runs some risk of a malignant development.

The incidence of malignancy in goiters is only about two per cent, so this risk is not great, but its existence should not be ignored.

SUMMARY

1. In the etiology of adenomatous goiter the majority of authorities believe the adenoma to be a stage in the proliferative and degenerative development of simple or hyperplastic goiter.

2. Clinical observations upon patients with goiters who are being treated with iodin tend to support Rienhoff's involutional theory.

3. Fetal adenomas are true benign neoplasms.

4. Iodin therapy is not dangerous in patients who have toxic or nontoxic adenomas.

5. Iodin hyperthyroidism occurred very infrequently in our series of patients.

6. Radiotherapy was of little or no value in thyroid adenomas.

7. Some patients with low metabolic rates showed symptoms of thyrotoxicosis.

8. Any adenoma of the thyroid is potentially malignant and a policy of procrastination should not be advocated in its management.

1930 Wilshire Boulevard.

REFERENCES

1. Hertzler, A. E.: Pathogenesis of Goiter Considered as One Continuous Disease Process, Arch. Surg., 16:61 (Jan.), 1928.

2. Rienhoff, W. F., Jr.: Involutional or Regressive Changes in the Thyroid Gland in Exophthalmic Goiter and Their Relation to the Origin of So-Called Adenomas, Arch. Surg., 13:391 (Sept.), 1926.

3. Ginsburg, S.: Toxic Adenoma of Thyroid, Arch. Surg., 44:73 (July), 1929.

4. Askey, J. M., and Toland, C. G.: Blood Pressure and Goiter, Calif. and West. Med., 34:80, 1931.

5. Dinsmore, R. S.: Prognosis and Treatment of Malignant Goiter, Trans. Am. Assn. Study of Goiter, 125, 1931.

6. Toland, C. G., and Kroger, W. P.: Cancer of the Thyroid, Surg. Clinics North Am., Vol 10, No. 5, 1201 (Oct.), 1930.

DISCUSSION

H. H. Searls, M. D. (University of California Hospital, San Francisco).—The author's paper presents an excellent summary of present-day conceptions of the nodular or adenomatous goiter. That the encapsulated adenoma satisfies all of the pathologic requirements of a true benign tumor still seems evident to many students of thyroid disease. In different endemic regions clinical variations may have modified the picture so as to lead to differing hypotheses concerning its etiology.

The patient with an advanced and neglected toxic adenomatous goiter remains an excellent operative risk, for the mortality rate in the surgical treatment of such patients is almost nil. However, cardiac decompensation should be relieved by bed rest and digitalis therapy. At the University of California Hospital, iodin medication before operation has been limited to patients with the hyperplastic or exophthalmic type of goiter.

X-ray therapy is contraindicated in adenomatous goiter, for such treatment tends to destroy the remaining normal gland tissue without affecting the adenoma.

Doctor Kroger has described adequately the common picture of the patient suffering from toxic goiter together with an associated hypothyroidism. In such instances the lowered metabolism, as shown by increased weight, feeling of cold and lowered basal metabolic rate, offers false reassurance to patient and consultant, whereas the tachycardia, increased irritability and emotionalism accurately betray the underlying toxicity.

When the patient with toxic adenomata exhibits hypertension, removal of the goiter rarely affects the blood pressure other than to check its further rise.

The threat of malignant degeneration is ever present for the patient with nodular goiter, and is the strongest indication for surgical removal of the adenomata.

⁂

Clarence G. Toland, M. D. (1930 Wilshire Boulevard, Los Angeles).—My thoughts correspond to those of Doctor Kroger. I am especially anxious to emphasize the necessity of considering all adenomas as potential malignancies. Only a small percentage become malignant, it is true, but the conservative attitude of *laissez faire* toward most adenomas is responsible for the occurrence of practically all malignant goiters. In the nineteen-year-old girl cited with the malignant adenoma, no malignancy was suspected before operation. The goiter was removed because of its unsightliness and the knowledge that eventually it would cause trouble. Had we procrastinated until it bothered her, we should have been faced with a hopeless problem. How much less reason is there with middle-aged patients having long-standing adenomas to placate with the philosophy of procrastination.

⁂

William E. Costolow, M. D. (Soiland Clinic, Los Angeles).—Toxic adenoma is not as well adapted to roentgen treatment as exophthalmic goiter. In the latter condition it has been shown that about the same percentage of favorable results may be obtained by roentgen treatment as by surgery. However, the results of radiation treatment of toxic adenoma are not nearly as unsatisfactory as this paper indicates. Undoubtedly surgery is the method of choice in the treatment of the majority of toxic adenomas. The operative mortality is very low and the results have been very good. In some cases, however, there may be contraindications to surgical removal. Some patients also refuse operation. If patients with toxic adenomas show a high metabolic rate, radiation may be justifiably used, with the expectation that the metabolism will be reduced to within normal limits in the majority of cases. The adenomatous tumor, however, will not be reduced much in size, if at all. In other words, in toxic adenomas with a high metabolic rate it is possible to reduce the metabolic rate and relieve the toxicity with radiation, although the patient will be left with an adenomatous tumor. If the tumor is small it may be of little consequence afterward, except from a cosmetic standpoint, but if the adenomatous mass is causing pressure symptoms, which frequently is the case, then surgery must be resorted to in order to relieve the patient. In toxic adenomas without pressure symptoms, radiation may be the only treatment that is necessary. In case of failure following radiation treatment, surgery can always be resorted to and the patient will undoubtely be a better surgical risk following the improvement in the toxic symptoms produced by the radiation.

As Doctor Kroger has stated, there is a small danger of malignant degeneration in these tumors. Following radiation treatment the danger must be very small, as Pfahler collected from the literature twelve hundred cases of toxic adenoma which had been treated by radiation methods and did not find a single case in which there was a later development of malignancy.

STERILITY*

REPORT OF SEVEN HUNDRED CONSECUTIVE CASES

By Frederic M. Loomis, M. D.
Oakland

Discussion *by Margaret Schulze, M. D., San Francisco; Louis I. Breitstein, M. D., San Francisco; Lyle G. McNeile, M. D., Los Angeles.*

Nine years ago the writer had the honor of reporting to this section a study of 150 consecutive cases of sterility. Since then Dr. John W. Sherrick and Dr. James V. Campbell have become associated with him. We now report jointly an analysis of 732 consecutive cases of this type, all private patients in our own office. The writer knows of no greater medical happiness than putting a baby in the arms of a mother who has so longed for one that she has been impelled to come and ask for it, and there are few problems of diagnosis more challenging and more complex.

We have taken fifteen or more facts from the history of each patient, making the appalling number of some fifteen thousand facts to be correlated and interpreted. Many of these facts of history and physical findings have been of little or no value for our specific purpose, though frequently of great value indirectly to the patient, as will be shown. We have long felt that fertility is a relative thing, as pointed out by Reynolds and Macomber.

---

* Read before the Obstetrics and Gynecology Section of the California Medical Association at the sixty-first annual session, Pasadena, May 2–5, 1932.

COMPLETE EXAMINATION NECESSARY

It has long been evident that anything less than a reasonably complete and patient series of examinations was quite useless. Nearly every patient had been to her own family doctor at previous times and had been told that he saw no reason why she should not become pregnant. We realize that many women go to their own good doctors who find an eroded cervix or other condition which they are entirely competent to treat, and these women we never see, as their prayers are answered without further help. In a sense, therefore, this group of 732 patients is quite definitely an adversely selected one.

PLAN OF EXAMINATION

It need hardly be stated that the examination consists of four or five parts, somewhat after the Meaker plan, including as a routine an unusually careful history, a complete physical examination of the woman, a Rubin test of passing carbon dioxide gas through the tubes, and a postcoital examination (Huhner) made within about an hour after exposure. To these are added condom examinations, metabolic tests and other determinators as indicated, but we do not include personal examination of the male, pelvic examination under anesthesia, nor other recommended procedures unless definitely demanded by circumstances.

From a practical standpoint for those who are interested in doing this pleasant work, it may be stated that we have found it advisable to make it perfectly clear to the patient before we even take her history that these various examinations are essential, that they must be made before we can tell her one useful fact (except when an impasse is reached before their conclusion), and that we do not want to begin unless she is willing to "carry on" patiently for a considerable time. She is told that as soon as these tests are completed we shall give her a fair opinion as to her prospects, and explicit directions or treatment as needed over a somewhat indefinite time, six months to a year. For this, the patient is told that she will pay a definite inclusive fee which will cover all ordinary treatment, and that this fee, contrary to all other custom in our office, is to be paid in advance. This requirement is based upon the observation that patients who are asked to pay for each procedure as it is advised are likely to say, "Let's wait till next month and perhaps I won't need it then," and this leads to interminable procrastination; and further, we know that when a woman has paid for a thing she is very likely to do as she is told and to come and get it! And results are what we both want.

THE RUBIN TEST

Let us take first the fundamental question of closed or open tubes. The Rubin test is the greatest advance made in many years, as until we had it we so frequently wasted our own time and the patient's money in attempting to do something with a perfectly hopeless patient—hopeless because whatever we might do elsewhere, we could not make her conceive with closed tubes. The importance of this is shown by the fact that only 53 per cent of the 474 patients on whom this test was made had normally patent tubes, 13 per cent being entirely and hopelessly closed after many attempts. Still more interesting is the fact that of the remaining 34 per cent whose tubes, closed on the first trial and partly or completely opened by repeated inflations, nearly 20 per cent, regardless of other conditions, promptly became pregnant. We believe the chief value of the Rubin test is in diagnosis, but in view of these figures it is impossible to deny its therapeutic value also, as pointed out in the excellent recent paper of Stein and Leventhal. In other words, fifty-seven women were saved useless treatment, and about thirty women apparently owe their babies directly to the opening of the tubes by this means. Although the question is frequently raised, we do not encourage the surgical opening of closed tubes, as we cannot promise its permanency, nor that the woman will become pregnant. On the few occasions when the patient has wanted surgery, we have used iodized oil injections and x-ray to determine the points of closure. We use x-ray in this way very infrequently now, feeling that it adds very little to our working knowledge.

THE HUHNER TEST

We find the postcoital examination of the woman of much more importance and interest than the examination of the condom specimen, since it shows the actual condition of the spermatozoa under the hazards to which they are normally subjected. Both are necessary in all questionable cases. Fifty-three per cent of these examinations were normal; that is, there were very numerous spermatozoa, well shaped, active and with normal progressive motion found either in the vaginal pool or in the cervical mucus; 37 per cent were only fair, the number of spermatozoa being markedly decreased or there were defects in form or motion; and in 10 per cent there was a complete aspermia, a practically hopeless condition. A number of these husbands have been under treatment, but only with moderate success and, so far as I know, with no resulting pregnancies. With a little tact it is not difficult to persuade a patient to have these postcoital tests made nor to administer any necessary treatment to the woman; but when the defect is found to be in the man, a great deal of tact is necessary to soften the blow. I suppose all men are convinced that they are born "good," and it is a serious psychic trauma when a man finds that he is not.

The observation of the fate of the spermatozoa in the vaginal and cervical canals is important in many ways. It has been stated frequently that the acidity of the vaginal secretion is of no importance, as it is overcome at once by the alkalinity of the semen. I cannot agree with this as I have found in several instances every spermatozoön dead in a highly acid vagina, and in the same patient millions of living spermatozoa after intercourse which had been preceded by an alkaline douche; and in several patients pregnancy has immediately resulted with no other treatment. Many times lively spermatozoa will be found in the vaginal pool, but none living can be found in the cervix, either because of a sticky discharge from erosions or, I am convinced, from the dry tenacious mucus so frequently found with cervical stenosis. It has been argued that a cervical canal large enough to afford exit to menstrual blood is large enough to admit spermatozoa. This is quite true; but with a tight cervix, poorly drained of its own mucus, we often find a surface like sticky fly-paper over which the spermatozoa pass with great difficulty, to say the least.

NEW GROWTHS AND INFLAMMATORY TROUBLES

Three per cent of the total number of patients had fibroids or other tumors of sufficient importance to interfere; seven per cent had definite evidence of old inflammatory trouble, some following induced abortion, but only one or two following gonorrhea, a surprisingly small number which is probably explained by the comparatively high type of patient. In several of these, only one side being affected, pregnancy promptly followed surgical removal of the trouble, and we now feel justified in advising such procedure.

MALPOSITION, STENOSIS AND EROSION

Thirty per cent had retroversions, and in 42 per cent there was acute anteflexion with a moderately small fundus. We know that many women with retroversions become pregnant easily, but we usually insert a pessary for trial at least, hoping that we may increase the chances; the anteflexed patients, on the contrary, are most likely to show marked stenosis, perhaps because of underdevelopment, itself an adolescent glandular defect. These patients we usually dilate, using the negative pole of the galvanic current, a simple and inexpensive office procedure. Curettage is never done without specific reason, such as menorrhagia, polyps, or other direct indication. Linear cauterization, however, is done whenever there is cervical erosion of any consequence and the incidence of cervicitis, erosion and excessive discharge is 38 per cent. The results are almost uniformly good.

THE ENDOCRINE QUESTION

And now, finally, a word about the most interesting and most elusive condition of all, the endocrine picture. Sixty-seven per cent of these women were so evidently deficient in this respect that it was at once noted; that is, there were obvious defects in the production of pituitary, thyroid or ovarian secretions. There were some who menstruated only two or three times a year, probably being deficient in all three important glands; some presented typical pictures of hypothyroidism with dry skin and hair, overweight and slow pulse; some had the severe menstrual headaches with nausea, and the so-called pituitary girdle, suggesting deficiency in the anterior pituitary. These would seem particularly amenable to treatment, but as yet only about 35 per cent have become pregnant. Many of these patients presented other problems as well. Two types of preparations have been outstanding, ordinary thyroid pushed at times almost beyond conservative limits and, hypodermatically, the comparatively recent sex hormone products. I recall one girl who flowed frequently and irregularly, bleeding slightly for weeks at a time. We curetted her, found a mild endometrial hyperplasia only, treated her with several of the standard drugs to control bleeding, and the condition was not helped in the least. Finally, though she was a slender girl with a normal metabolic rate, we gave her thyroid in fairly large dosage. The menorrhagia promptly ceased and in a short time pregnancy occurred as desired. We have long felt that the metabolic rate is not the sole criterion of thyroid efficiency, by any means, and indeed it may be deceiving. We are interested in seeing this observation on the part of others, as in the recent publication of Waters and Williams.

We have used the female sex hormone rather empirically and do not see how we can be explicit in our conclusions, as several conditions are almost necessarily being treated at once and judgment is still as difficult as Hippocrates thought it. Unfortunately for speeches at medical conventions, our patients want babies, not statistics, and want them soon. However, there are fifteen or more in this series with whom we had exhausted all our resources who promptly became pregnant when they were called back and given the female sex hormone preparations. We reach a place in the treatment of these girls when everything mechanical has been corrected and we still fail and do not know why—evidently because of biochemical conditions which are still quite beyond our grasp.

There are 732 patients in this series. One hundred and ninety-three of these have not been treated at all, having come too recently to be included fairly in computing results or having not even completed their examinations, leaving 539 who went through the required tests and treatment until successful or until told that pregnancy was unlikely or impossible. Fifteen of this number were dismissed as hopeless because of their husbands' complete aspermia, and fifty-one went no further because repeated trial showed apparently hopelessly closed tubes, leaving 473 who received partial or complete treatment so far as we could give it. Two hundred and eight, or 44 per cent, became pregnant, and from these women we have secured 331 pregnancies and 237 living babies. It is an interesting fact that thirty-six, or 17 per cent, of these who became pregnant suffered involuntary abortions, as if nature were protesting against a pregnancy forced upon her, though thirteen of these eventually went through to term. However, seeking further protests from nature to what might be called an "induced pregnancy" such as these, we find that the incidence of toxemia is not unusually high, 29 per cent having moderate or severe nausea and only 4 per cent showing late toxemia of some degree, only one instance of eclampsia occurring.

CONCLUSIONS

The histories of 732 consecutive sterility patients are analyzed, of whom 539 completed their examinations and 473 were treated. Of these, 208, or 44 per cent, became pregnant.

Fifty-three per cent gave normal Rubin tests, and 13 per cent were dismissed because repeated efforts showed total closure of tubes. Repeated efforts produced partial or complete opening of the 34 per cent, which were unsatisfactory at first trial, and nearly 20 per cent of these women became pregnant, suggesting the therapeutic value of this procedure.

Fifty-three per cent showed normal spermatozoa after coitus, 37 per cent were only fair, and 10 per cent showed complete aspermia, giving a high percentage of male responsibility in sterility or relative infertility.

Cervical stenosis and erosion were found in 42 per cent and 38 per cent, respectively, and are considered very important causes of failure. Both are amenable to office treatment.

Sixty-seven per cent showed endocrine dysfunction, most of whom were treated with thyroid or preparations of the female sex hormone. Basal metabolism is not relied upon alone in judging hypothyroidism. Thirty-five per cent of these patients became pregnant.

The incidence of toxemia is not higher than normal, but involuntary abortions occurred in 17 per cent.

350 Twenty-ninth Street.

DISCUSSION

Margaret Schulze, M. D. (University of California Hospital, San Francisco).—Doctor Loomis is to be congratulated upon the excellence of his results in a field which has in the past been difficult and often unsatisfactory. Undoubtedly the thoroughness with which he has made his studies and the intelligent coöperation of a superior type of patient in carrying out his treatment have contributed very largely to this success.

The Rubin test has been one of the great advances in the study of these patients and is essential in all cases where the fault has been found to lie with the woman. All authorities are agreed that it has definite therapeutic as well as diagnostic value. Its very simplicity makes it necessary to sound a note of warning to the inexperienced, and to reëmphasize the fact that there are certain contraindications to its use. The main one of these is, of course, the presence of any evidence of infection of the lower genital tract and it is absolutely necessary that any cervical or vaginal discharge be cleared up completely by cautery or other appropriate treatment before the test is undertaken. Because of the theoretical danger of displacement of endometrial fragments through the tube with the possibility of an endometriosis, it is advisable that the test be done only in the early part of the intermenstrual cycle. As Doctor Loomis has stated, the results following plastic operations on closed tubes are not brilliant; yet in an occasional case, where the closure is due to peritubal adhesions and the mucosa remains comparatively normal, success may be obtained. It seems advisable to follow such operations by tubal insufflation.

In the past the greatest success has been obtained in those cases in which it was possible to correct some definite mechanical obstacle, while those in which the sterility was due to constitutional defects the result of endocrine deficiency remained more or less hopeless. The recent great advances in this field make it seem probable that in time we shall develop efficient therapeutic agents here also.

I should like to ask Doctor Loomis whether his statistics confirm the statements of Unterberger, Pfannenstiel, and others, that pregnancy following the use of an alkaline douche in cases where the sterility seemed due to a hyperacidity of vaginal secretion resulted in the production of male offspring only?

⁂

Louis I. Breitstein, M. D. (516 Sutter Street, San Francisco).—Doctor Loomis, in his paper on sterility, thought enough of the question of closed tubes to give considerable mention to the Rubin test. He stated that the chief value of the Rubin test was diagnostic, but in view of his statistics the therapeutic value was not to be denied. Interesting in this respect is the fact that thirty of the mothers whose tubes were closed became pregnant when the tubes were completely or partially opened by repeated inflations. Did Doctor Loomis in his experience have any of his cases terminate in tubal pregnancies? One must ever be mindful of this possibility.

Further, fifty-seven women were saved useless treatment, evidently because their tubes were entirely and hopelessly closed even after many attempts with inflation. One must not be altogether too pessimistic in these cases, for considerable tact must be used to "soften the blow" and it is best to leave the question open to time. Time brings about changes even in what appear to be hopelessly closed tubes, and often to our surprise a patient whom we dismissed as hopeless returns pregnant and goes to term. Problems in sterility are ever occurring; not all of them are simple and most are elusive, but Doctor Loomis has presented us with an intelligent and scientific scheme of how they should be attacked.

⁂

Lyle G. McNeile, M. D. (Pacific Mutual Building, Los Angeles).—There has been a conspicuous awakening of interest in the problem of sterility during the past decade. While the treatment of sterility is in many instances empirical, the causes have been very well tabulated and recognized, diagnosis has been greatly improved, and great advances in treatment are being made. Doctor Loomis has definitely shown that sterility is not a simple one-sided problem that requires not only a gynecologic history and abdominopelvic examination of the patient, special gynecologic study, medical-endocrine history, examination of both husband and wife, but often a painstaking genitourinary study of the husband. A sterility study which ignores the husband as a possible factor is worthless. Doctor Loomis has pointed out the absolute necessity of requiring patients to submit to a complete study. I, too, am convinced that the Rubin test is of great therapeutic as well as diagnostic value. This paper is timely and complete; it merits the careful study of all obstetricians and gynecologists engaged in sterility studies.

⁂

Doctor Loomis (Closing).—Contrary to our expectation, we have not yet had an ectopic pregnancy in a sterility patient, although I am sure some of our successful patients have had incompletely patent tubes, the closure probably being near the fimbriated end of the tube. Doctor Schulze asks an interesting question, which I can answer only partially, but the answer is interesting also, though it may not mean much. In a small group of twenty-seven successful patients of high vaginal acidity who were directed to use alkaline douches, there were born nineteen male babies and only eight female.

TOXEMIAS OF PREGNANCY*

By Louis I. Breitstein, M. D.
and
Abraham Bernstein, M. D.
San Francisco

Discussion *by E. M. Lazard, M. D., Los Angeles; Margaret Schulze, M. D., San Francisco; John A. Sperry, M. D., San Francisco.*

THIS paper discusses the toxemias that occur in the latter half of pregnancy. They are of grave concern to the obstetrician because:

First. Any pregnant woman, irrespective of age or parity, can develop a toxemia. Tables 1 and 2 indicate incidence under certain conditions.

Second. Any toxemia, no matter how simple or mild, may develop into a severe form, resulting in serious damage or death to either mother or child, or both.

Just what it is and how it is caused is still an enigma. Theories as to its etiology are ever being advanced; yet year after year passes and we are no nearer the solution. The newer methods of treatment, so ably described, are not living up to their promises, and the pathologico-anatomical findings cause much controversial discussion.

However, there are two certain facts that we all can subscribe to, namely, that the toxemias are concerned with a disturbed unbalanced metabolism, and that it is due to the presence of a fetus. That is as far as we have gone and that was the status twenty years ago. True, much information has been collected through laboratory examinations of blood, urine, and isolated chemical substances; the reports in the literature are too numerous to mention. The laboratory yet may solve the problem. On the other hand, the only real contribution that has yielded any result is the one made through clinical and statistical study, namely, *prenatal care.*

STATISTICS FROM MOUNT ZION PRENATAL CLINIC

We submit for your consideration a clinical and statistical study of the cases of toxemia from the prenatal clinic at Mount Zion Hospital, San Francisco.

In the past sixteen years, we have seen at the Mount Zion obstetrical clinic 8,054 maternity cases. These patients have registered at the clinic for prenatal care; were under observation all through their pregnancy; were delivered in our indoor service; and were followed up by our postnatal service. From this material 222 (2.6 per cent) cases of toxemia in latter half of pregnancy were collected. They were classified as toxemias due to (1) preëclamptic toxemia; (2) eclampsia; (3) toxic chronic nephritis; (4) very faint trace of albumen following a relative increase in blood pressure; (5) sudden abnormal increase in weight.

Table 1.—*Age of Patients in Two Hundred and Twenty-Two Cases of Toxemia*

Age Period	Number	Per Cent
15 to 20 years	31	14
20 to 30 years	98	43.5
30 to 40 years	83	37.6
40 to 45 years	10	4.9

However, this classification was made purely for statistical study.

From Table 3 we note that in the first five years, 1916 to 1920 inclusive, there were twenty-six cases of toxemia. These cases were diagnosed according to the complete symptom syndrome, namely, albumen in the urine; high blood pressure, over 140; edema, and other subjective symptoms. The following five years, 1921 to 1925 inclusive, we show an increase in the number of cases to seventy-one, and credit this increase to the fact that our prenatal clinic began to weigh[1] patients at their regular periodic visits. Sudden abnormal increases in weight were recognized as disturbances in metabolism and classed as beginning toxemias. Patients showing a relative increase in blood pressure, although the reading was considered normal, associated with a slight trace of albumen, were also classified as beginning toxemias. In view of this finer diagnosis, the subsequent five years show a still further increase in the number of cases of toxemias.

Table 2.—*Parity Groups in Two Hundred and Twenty-Two Cases of Toxemia*

Parity	Number	Per Cent
Para 0	104	46.8
Para 1	55	24.6
Para 2	32	14
Para 3	17	7.6
Para 4	6	2.6
Para 5	3	1.3
Para 6	2	0.9
Para 7	0	
Para 8	2	
Para 9	0	
Para 10	1	

The prenatal study from the list revealed the interesting fact that prenatal care does not prevent toxemias. It makes earlier diagnosis possible and it does show that prenatal care decreases the number of cases of eclampsia and toxic deaths. We explain this by the fact that we recognize our toxemia patients earlier, and prevent serious damage by instituting the proper treatment.

PRENATAL CLINIC ROUTINE

The routine followed in the Mount Zion Hospital prenatal clinic is as follows:

When the patient first visits the clinic a careful history is taken and at this time a past history of acute infectious diseases of childhood, or of later life, is elicited and carefully recorded. Following this the patient is given a complete physical examination, paying particular attention to blood pressure, weight, and sites of focal infection. Complete blood and urine examinations are

---

* From the department of obstetrics, Mount Zion Hospital.

* Read before the Obstetrics and Gynecology Section of the California Medical Association at the sixty-first annual session, Pasadena, May 2-5, 1932.

Table 3.—*Grouping of Mount Zion Hospital Patients.*

Years	No. of Cases	No. of Toxemias	Pre-Eclamp.	Eclampsia	Chronic Nephritis	Albumen with Relative Increase in Blood Pressure	Sudden Increase in Weight	Deaths
1916	404	3	2	1	0	0	0	0
1917	518	5	1	2	2	0	0	1
1918	658	6	2	3	1	0	0	2
1919	618	5	2	1	1	1	0	0
1920	558	7	2	3	2	0	0	1
1921	589	13	1	0	2	6	4	0
1922	499	8	0	1	1	3	3	0
1923	510	14	2	1	0	4	5	0
1924	517	15	3	0	2	6	5	0
1925	519	21	3	0	3	5	10	0
1926	491	19	3	1	2	4	9	1
1927	464	17	1	0	1	7	8	0
1928	446	24	3	1	2	5	13	0
1929	410	26	2	1	2	5	16	1
1930	443	24	3	0	3	5	14	1
1931	410	15	2	0	1	3	9	0
	8054	222	32	15	25	54	96	7

then done. The patient is instructed as to the necessity of appearing regularly at the clinic and carrying out the hygienic rules according to the printed form. Visits are made every two weeks.

The early symptoms and findings that we are continually on the lookout for are:

Sudden Increase in Weight.—We allow a normal pregnant woman to gain from three to four pounds a month. When this limit is passed, corrective treatment is immediately instituted. The allowance of a 2,500 calorie diet is cut down to 1,200. Though ambulatory, the patient must report to the clinic at least every other day, bringing samples of urine with her. If in spite of this correction the weight still climbs, we then investigate the fluid intake and compare it with the output. Thus, we detect any case of overweight[2] due to faulty water metabolism, and the amount of fluid intake is cut down to 1,500 cubic centimeters in twenty-four hours. We are able by this method to hold the weight down to normal in most cases. Those that do not respond to this regimen are sent into the hospital for observation and further treatment. We have had the opportunity of viewing certain cases of overweight wherein no corrective treatment was instituted. They showed within a short time that the remaining symptom syndrome of increase in blood pressure, followed by the appearance of albumen and certain suggestive symptoms, were natural sequences.

BLOOD PRESSURE

Using the desk-model mercury baumometer, we find that the normal average reading runs between 100 to 125 systolic and 50 to 80 diastolic. For instance, a patient's reading at repeated visits averages 110/60 and for no explained reason jumps to 125 to 130/80. We term this a relative increase in blood pressure and expect shortly to find a very slight trace of albumen in the urine. Now with the detection of her increase in blood pressure, or both of the two clinical syndromes, we make a tentative diagnosis of impending toxemia long before the toxemia has necessarily manifested itself. Only by work of this nature can we conscientiously take advantage of prophylaxis in the management and treatment of toxemias. We justify ourselves in taking this stand as a result of our clinical experience.

TREATMENT

Treatment for toxemia of pregnancy depends upon prevention, and prevention depends on early diagnosis. The treatment is purely empiric, bearing in mind that mild cases may be the forerunners of grave toxemias. By empiric treatment we mean rest in bed at home or in the hospital, restricted diet, fruit juices, cooked vegetables, alkaline waters, and milk. A mild saline laxative, milk of magnesia, or citrate of magnesia is given daily. The intake and output are measured as well as possible. The patient is assured and made happy, as the mental attitude and psychologic effect must be taken into consideration.

In spite of conservative treatment, if the case progressively gets worse we begin to make arrangements to terminate the pregnancy. The methods used depend entirely upon the case *per se*. We feel that in the treatment of toxemias the patient is to be considered first and do not try to treat by classification. We have observed that any toxemia of the latter half of pregnancy that does not respond to good conservative treatment is gradually producing certain pathologic changes.[2] The longer the case is protracted the more tissue is damaged. These changes affect every organ in the body, especially the kidneys, liver, and brain, and in some measure are a menace to future health.[4] To obviate permanent damage, the pregnancy is terminated, if necessary, by operative procedures.

CONCLUSIONS

In conclusion, our study shows that:

1. Prenatal care does not prevent toxemia.
2. Prenatal care diminishes the number of cases of eclampsia and toxic deaths.

Table 4.—*Treatment in Two Hundred and Twenty-Two Cases of Toxemia of Pregnancy*

Delivered Spontaneously Number Patients	Operative Deliveries Total Number of Patients
158	17 Caesarian Sections
	35 Forceps
	4 Voorhies Bag
	8 Version and Breech Extractions
	—
	64

3. More toxemia patients are recognized earlier by the study of weight and relative blood pressure increase.

4. Patients treated conservatively, with no response, are terminated by operative measures to avoid permanent tissue damage.

350 Post Street.

REFERENCES

1. Davis, C. H.: The Weight in Pregnancy—Its Value as a Routine Test, Am. J. Obst. and Gynec., 6:575-581, 1923.

2. Kemper, W., and Zangemeister, W.: Ueber die terminale Gewicht sabralime Schwangerer, Arch. f. Gynak, 121:604-619, 1924.

3. Peckham, C. H.: Chronic Nephritis Following Apparent Toxemia of Pregnancy, Am. J. Obst. and Gynec. (March), 1932.

4. Rucker, M. P.: Late Sequellae of Eclampsia, Am. J. Obst. and Gynec. (Feb.) 1932.

DISCUSSION

E. M. Lazard, M. D. (1930 Wilshire Boulevard, Los Angeles).—Doctor Breitstein's review of the toxemias of pregnancy occurring in the obstetric department of Mount Zion Hospital again emphasizes the importance of proper prenatal care in preventing the more serious forms of toxemia in the latter half of pregnancy. While we all agree with his first conclusions that prenatal care does not always prevent toxemia, I would emphasize his second and fourth conclusions, *viz.*, that prenatal care *does* diminish the number of cases of eclampsia and toxic deaths and that patients treated conservatively, with no response, should have their pregnancies terminated to avoid permanent tissue damage.

In a recent review of the first thousand obstetric patients delivered at the Cedars of Lebanon Hospital, Los Angeles, where all cases are under prenatal supervision, I reported two cases of eclampsia, practically the same incidence, 0.2 per cent of eclampsia, as is reported by Doctor Breitstein, *viz.*, fifteen cases in 8,054 deliveries; this contrasted with a two per cent incidence of eclampsia which we have at the Los Angeles General Hospital, where the material is largely unsupervised prenatally.

I also agree with the author in the conclusion that toxemias are recognized earlier by the study of weight and relative blood pressure increase, but would lay more stress on prophylactic measures in the attempt to prevent the development of the toxemias.

Of importance in keeping the pregnant woman well, I believe in establishing a proper dietary regimen, with search for and removal, if possible, of all local foci of infection and protection against the occurrence of acute infections which might act as exciting causes of a toxemia.

Such studies as this are of greatest importance in keeping before the profession the necessity of constant care and supervision of these patients, if we are to succeed in reducing the incidence of this most serious complication of a perfectly normal function to an irreducible minimum.

⁂

Margaret Schulze, M. D. (University of California Hospital, San Francisco).—Doctor Breitstein's paper is most valuable and timely and serves to emphasize a number of most important facts. So long as the etiology of pregnancy toxemia remains obscure, our treatment must necessarily remain empiric. As this careful study so convincingly shows, we cannot hope to eliminate toxemias entirely by prenatal care. However, early diagnosis followed by conservative treatment with prompt termination of the pregnancy if the patient does not respond to such treatment, will do much to prevent development of the toxemia to a degree where it becomes a menace to the immediate life or the future health of the patient. Our experience in the University of California obstetric service fully confirms the experience of both Doctor Breitstein and Doctor Bernstein in this respect. Several years ago I made a study of the cases of eclampsia occurring in the University of California obstetric service and in the San Francisco Hospital obstetric service. I found thirty cases of eclampsia in the former service in a series of six thousand obstetric cases, with a mortality of one, or 3.3 per cent. This service had had a well-regulated prenatal clinic for many years. In 2,700 cases in the San Francisco Hospital there were twenty eclampsias, with a mortality of five, or 2.5 per cent, although the treatment on the two services was comparable. At that time the prenatal service at the San Francisco Hospital was in its infancy and many cases were admitted to the hospital directly as emergency cases. In recent years with the organization of a well-controlled prenatal clinic for this service also, we have noticed a marked decrease in the severe type of toxemia, although we have constantly in the hospital a number of women under treatment for toxemia.

Doctor Breitstein's first statement, that any pregnant woman, regardless of age or parity, may develop a toxemia, cannot be emphasized too much. Not infrequently a woman will feel that because she has passed through one or a number of pregnancies successfully prenatal care is no longer so essential and may find it inconvenient to report to the doctor as frequently as requested. It is only by careful education of our patients in this respect and careful control of the whole period of pregnancy that we may make childbearing as safe as it should be.

⁂

John A. Sperry, M. D. (490 Post Street, San Francisco).—The large number of cases and the excellent manner in which they are reviewed makes Doctor Breitstein's contribution interesting and valuable. However, it should be borne in mind that these are clinic patients, who for the most part are overburdened with household cares entailing in many instances hard physical work. Also that they are for the most part of a comparatively low intellectual development. For these reasons the careful instructions given them in the prenatal clinic are often more or less disregarded or they are, for obvious reasons, unable to carry them out. It is quite plain that the mother of four or five children, who is trying to feed, clothe, and educate them on the small wages her husband brings in, cannot take care of herself as directed. These people have to work hard throughout the whole term of pregnancy, and resume their household routine a few days after returning home from the hospital.

It is true that our fine horses and cattle are given more consideration than the majority of our women.

It would be interesting to make a comparative study of a large number of private patients and an equal number of clinic patients. Perhaps to some extent the overwork of the poorer patient would be counterbalanced by the bridge-playing, cigarette-smoking, cocktail-drinking tendencies of the more well-to-do, with their attendant late hours and nervous strain. The members of this class, although they exist, are, fortunately, not numerous.

I am also often impressed with either the disregard or the misunderstanding of instructions, and it is my experience that prenatal care and precautions have to be gone over and emphasized with each visit.

It is remarkable how quickly blood pressure will go up after some unusual exertion. When such a sudden rise occurs I ask patients what they have been doing, and frequently find that they have just finished household moving, preparing a better place for the expected baby, or have indulged in some other strenuous physical activity.

I agree that when toxemias show no response to treatment and are getting to a dangerous stage the pregnancy should be interrupted. However, I believe that great care should be exercised in choosing the method of interruption which carries the least operative shock. These patients are already in a serious condition and should not have to bear the added strain of a major surgical procedure if simple induction of labor is feasible, and comparatively easy delivery can be effected through the birth canal.

THE LURE OF MEDICAL HISTORY*

JOHANN SIGISMUND ELSHOLTZ (1623-1688)†

CLYSMATICA NOVA (1665): ELSHOLTZ' NEGLECTED WORK ON INTRAVENOUS INJECTION

By ETHEL GLADSTONE
San Francisco

II‡

CHAPTER III. *Reason for the Name; Apparatus; Division.*—But now, before I proceed to recount experiments individually, it seems suitable to tell whatever there is to be said in general about this new art.

I myself feel this way about the reason for the name: Since this operation consists of injection through a syringe, it is perhaps not improperly called the *Art of the Enema,* or the *New Clyster,* unless someone objects to these familiar words. For it is common knowledge that clysters are injected in the anus and the ears, and in the uterus, the bladder, and the penis, and also in the sinuses and fistulas. All of these uses, however, pertain to the old type of clyster; injections which are made in the arteries or veins of the body are due to the industry of more modern scientists.

Moreover, in every art certain instruments are necessary. As the proverb goes, "Good tools make a good workman." In this art, too, exact apparatus is required. For working with animals there must be first a table, knife, lancet, syringe, tubes, and the liquid to be injected; also a sponge, cold water, bandages, and needle and thread. Fewer instruments suffice in working with men; merely a lancet, syringe, tubes, liquid, and bandages. There is very little necessity for the other instruments, and absolutely none for some of them. The illustrations should be consulted. I must mention here, too, that the bladders of animals, with which we generally inject alvine enemas, are not so well suited to this operation; it can be done more quickly by using a small metal syringe.

Furthermore, the new art brings new distinctions. If you will consider its purpose, you will see that it can be divided into two parts: First, research, which is concerned solely with acquiring knowledge and may be accomplished in experiments with animals; and second, salubrity, in which, obviously, the work must be done to man in order to perform any cures.

I also considered the different operations there can be in *infusion* when some liquid is merely injected in a man or in an animal; and the operations necessary in transfusion when blood is transfused either from one animal to another, or from an animal to a man, or from one man to another. This type of transfusion can be called *simple,* in consideration of the fact that there is also *reciprocal* transfusion, an example of which will be given in Chapter X.

* * *

Chapter IV. *Experiments Made by the Author, as Much on Animals as on Man.*—Since we have made clear the primary distinctions of this art, the next thing will be to give examples of each in turn, beginning with those experiments we ourselves have made to augment medical knowledge. In the following chapters we shall include whatever is of importance in foreign experiments, or histories, as Galen distinctly called his book *De opt. sect. ad Thrassibul, ch. XIV.*

First, I bound a large dog to a table by the legs, which are most suitable for this sort of surgery. Cutting away the skin on the inside of his right leg, I exposed the crural vein of that place and made an opening in it with a lancet. I had previously ordered an assistant to compress the vein by inserting his finger on the other side of the incision in order to check the flow of blood. Then I drew an ounce of water into a silver syringe and, turning its point toward the abdomen, as the illustration opposite shows, I injected the water through the opening. I was decidedly happy to accomplish this as successfully as I did.

The point of the syringe (as I noticed in this experiment) should be straight, not curved; the curve hinders the injection instead of aiding it.

Finally, I placed a small round piece of fungus over the wound and sewed the skin together with thread, and then put the dog back on the ground. He licked the wound for about an hour, then got up and ran off as if nothing had happened to him.

In this manner, I became more certain that this type of injection is possible not only in a corpse, as I had proved in the arm of a suffocated woman, but also in a living being. I tried the same experiment on a second dog, but with this difference: in place of pure water, I injected some good Spanish wine. What happened then, you ask? I noticed absolutely no signs of drunkenness. But perhaps you did not infuse a quantity large enough to cause drunkenness? I, myself, also believe that this is true; and so I have no doubt of the result if more wine had been injected.

I was not satisfied with these experiments, but gave a third dog an ounce of liquid *extractum*

---

*A Twenty-five Years Ago column, made up of excerpts from the official journal of the California Medical Association of twenty-five years ago, is printed in each issue of California and Western Medicine. The column is one of the regular features of the Miscellany Department of California and Western Medicine, and its page number will be found on the front cover index.

† From the University of California Medical School Library.

‡ Part I of this translation of the *Clysmatica Nova* of Elsholtz was printed in CALIFORNIA AND WESTERN MEDICINE, June, 1933, page 432.

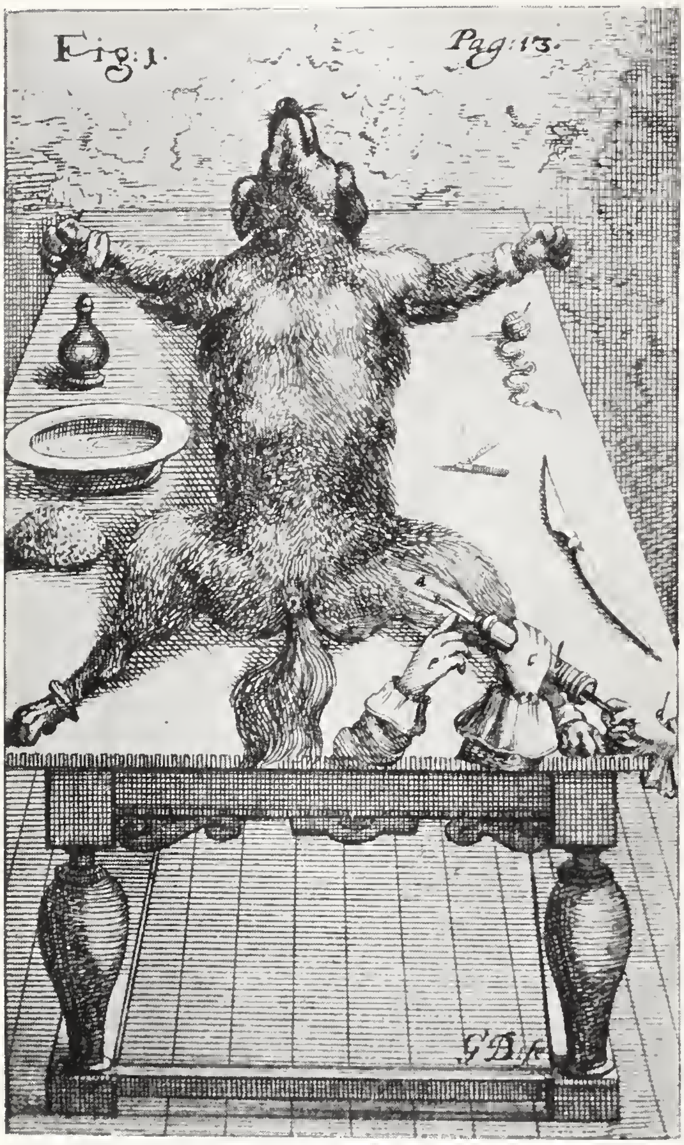


Fig: 1.
Pag: 13.
G.B. f.

Fig. 3.—Illustration from Elsholtz' *Clysmatica* (1667), showing his method of intravenous injection of drugs into dogs. (From a copy in the University of California Medical School Library.)

Explanation of the letters in Figure I, which depicts simple infusion in animals: *a*, crural vein, exposed in dog; *b*, syringe filled with medicated liquid, and inserted in opened vein; *c*, right hand of surgeon, holding piston; *d*, left hand of surgeon, pushing plunger; *e*, hand of attendant, compressing vein with finger.

opii at 10 a. m. This dog was very strong and ferocious, and all through the infusion made an uproar that nearly exhausted us; but as soon as the operation was over he became astonishingly tame. During the next hour his eyes grew dull and half-closed, and he became so sleepy that he did not arouse himself even when he was struck hard on the nape of the neck with a finger. It is true that as often as I touched his injured foot he would raise his head a little and then immediately lie back as if overcome by sleep. About noon I noticed that his tongue was hanging out, and pressed it with my finger. He did not move in response to this pressure, and so I pricked it with a needle. Since he did not notice this, I thrust the needle in deeply; then he raised his head a little, but almost instantly let it fall back.

Convinced in this manner of his incipient stupor, I began to prick his uninjured hind foot, and observed that the dog made no movement when the needle was thrust through the skin in the usual way; but when it was continually plunged up to the head into the flesh itself, he gave signs of feeling. At about one o'clock in the afternoon he got up, turned around in a circle several times, and then fell down and went to sleep again, like a drunkard. He also refused bread and a pan of water when it was put to his mouth, so that he seemed to have hydrophobia.

Then, since I opportunely recollected that he was a hunting dog, we aroused him to the chase by fictitious shouting. He struggled to come to himself and get up; but the attempt was useless because of his stupor and the condition of his legs, which were as if paralyzed. So he slept the rest of that day and all the next night and day before he came to himself and was able to stand steadily on his feet. Nevertheless, he finally became perfectly well.

At 10 o'clock in the morning, I injected in a fourth dog an ounce of *spiritus vitæ aureus*, a customary cathartic in the laboratory of our court, giving him as much of it as is sufficient for a man. For several hours he seemed to feel badly, and wandered about here and there like those who have drunk too much of a medicine, so that it disturbs them without accomplishing its purpose. But finally at noon, after about the tenth bowel movement, he had a sufficiently satisfactory one. I do not doubt that this slow and weak movement was caused by the insufficiency of the dose. And although some may surmise that purges do not have the same effect on dogs as on men, nevertheless I deduce from this imperfect operation that it is a possibility.

About two o'clock in the afternoon, I injected in a fifth dog an ounce of *vinum emeticum*, prepared from *Crocus metallorum*. He commenced breathing very loudly, as people do who are lying down; and, panting and driveling, began to vomit two hours after the infusion. Meanwhile he was very restless, and crawled about from one corner to another. Part of the stuff he brought up was thin, part sticky and full of phlegm; and some of this he swallowed again after vomiting it, as dogs do. The following night he lay as if he were asleep, and in the morning, contrary to my intention, he was found dead.

And so, besides the vomiting, this drug caused his death. I conjectured that the reason was that, in order to increase the strength of the *Crocus metallorum*, I had given about sixteen grains of it, although eight are sufficient for a man; and also, besides the amount of the infusion, I had not filtered the drug through blotting paper. So it happened that not only the wine, filled with the property of antimony, but the saffron powder itself in substance, as the laymen say, entered the heart lethally. But if this *vinum emeticum* is given in a moderate dose after it has been filtered, there is no reason at all to fear such a violent effect.

Engaged in these rudimentary experiments, I had paid no attention to the amounts of doses up to this time. Rather, I had sought the most complete proof whether, if separate drugs were injected separately through a vein, they would each still have their individual accustomed results; they did, absolutely. But granting that cathartics work

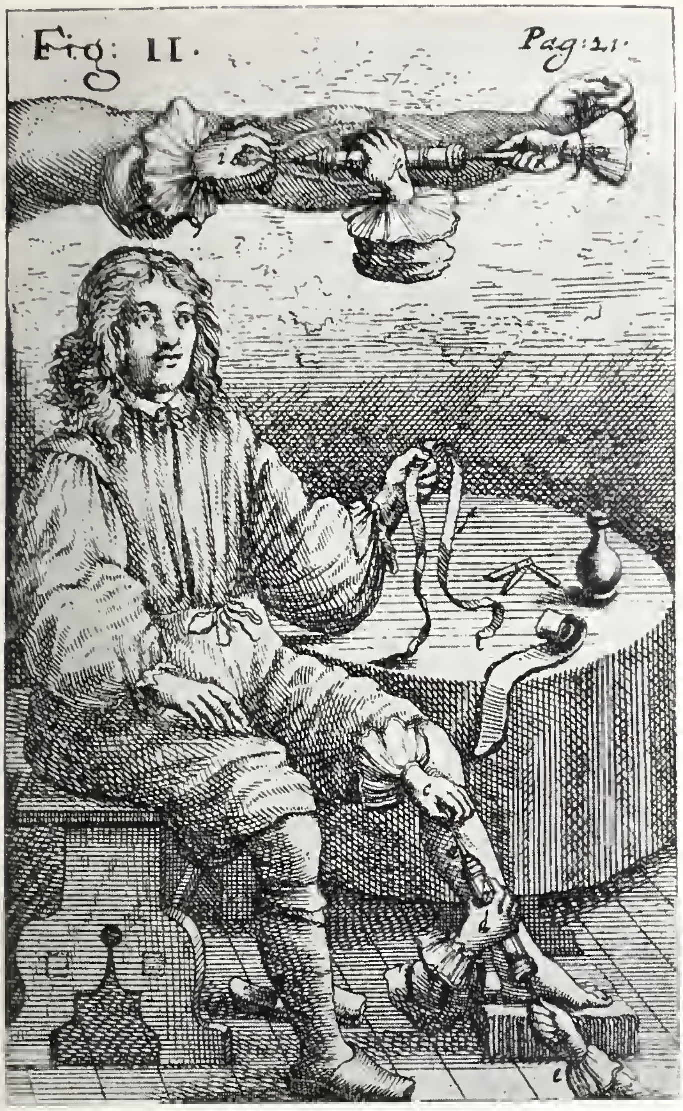


Fig. 4.—Illustration from Elsholtz' *Clysmatica* (1667), showing his method of intravenous injection of drugs into humans. (From a copy in the University of California Medical School Library.)

Explanation of the letters in Figure II, in which simple infusion in a man is demonstrated. In the leg: *a*, inner branch of crural vein, opened by lancet; *b*, syringe filled and inserted in vein; *c*, left hand of surgeon, compressing skin; *d*, right hand of surgeon, holding piston; *e*, hand of assistant, pushing plunger; *f*, ligature removed after dissection. In arm: *g*, median opened; *h*, syringe inserted; *i*, left hand of surgeon; *k*, right hand of surgeon; *l*, hand of assistant.

more weakly than is right, and that emetics act excessively, nevertheless the quantities of doses. of which time will bring accurate knowledge, must be taken into account.

And last, I boiled *arsenicum album* in water and injected in a sixth dog an ounce, or a little more, of this distillation. After a quarter of an hour he began to snort at intervals, with rumblings in the abdomen, to foam at the mouth, to pass a great deal of excrement from the bowels and the bladder, and to turn violently from one side to the other although he was tied firmly by all four feet. After that he commenced snorting more frequently and heavily, rolling his eyes, and going through all the symptoms which customarily follow the drinking of arsenic. After two hours had passed he closed his eyes and wailed loudly through his open mouth. A little later, before the beginning of the third hour, he became silent and died.

Moreover, if poison were given through the mouth and an antidote through a vein, or, on the contrary, an antidote through the mouth and poison through a vein, the result of this struggle between the two would be apparent.

Progressing from my experiments with dogs to work with men, I began to ask among the more intelligent sick people I encountered if they would undergo infusion. And very recently three privates from the bodyguard of our most Serene Elector permitted it.

The first suffered from an old ulcer on his left leg which, however, was now beginning to heal. I gave him some good advice, telling him that if he wished to be healed quickly it could be by opening the inner branch of the crural vein near the ulcer and injecting a very little of a certain *liquor balsamici* through a fine tube; and when, in hope of becoming well, he readily consented, I ordered Andrea Horch to open the vein. Horch is head surgeon of the said legion, whom I taught this science so that he could assist me more in examining the troops and so lighten the labor.

I inserted in the opened vein a small syringe filled with *aqua plantaginis;* compressing the skin above the opening, I plunged the needle in without obstacle or injury; how this was done will be clear to those who look at the following illustration.* After a bandage was put on the wound, I asked the patient if the tube entering his leg had caused him great pain. "Almost none," he replied. And so he was dismissed.

The second guardsman, because of a fever, asked to have his median vein opened. I asked him to allow an anti-fever serum to be injected after a sufficient quantity of blood had been let. He agreed; and we skillfully injected a spoonful of distilled *aqua carduibenedicti* before we finished.

The third, accustomed from birth to perfect health, had never before had a vein opened. But in later years he had got a scorbutic impurity in his veins from improper food, and so felt a heaviness in his limbs. Therefore I advised a phlebotomy, first cautioning the man not to look at his arm, so he would not be frightened. "All right," he said, "I'll keep my head turned the other way." In this way, after enough blood had been let, we injected some *aqua cochleariæ* without his knowledge.

My idea was confirmed by these three experiments, and I became even more certain that this new art of the clyster is useful not only in working with dogs and other animals, but also with the human body itself. Indeed, the work can be carried out far more easily with human beings. For in dogs the skin must first be cut open and the veins freed from the membranes, which is a tedious task; and further, we are frequently disturbed during the operation by the animal's tossing about, although he is bound. In man, when the limbs are bound, the veins swell, and so lend themselves to observation. Besides, a man of sound mind, once he has given his consent, does not resist the person working on him. Moreover, the veins in an adult man are more exposed than those in a dog, and so liquid can be injected in them more easily.

(To be continued)

---

* Note.—See Fig. 4 (which is Fig. II of the folio).

CLINICAL NOTES AND CASE REPORTS

DUODENAL STASIS

By Paul H. Moore, M. D.
Los Angeles

THIS condition cannot be considered as a true clinical entity any more than gastric stasis can be considered as such. It is often mistaken for numerous varieties of abdominal pathology. There are several grades encountered from the very mild transient type of functional origin to the almost complete obstruction due to organic diseases.

The transverse duodenum is the part that is usually occluded. It crosses the aorta, vena cava, and the vertebral column at the level of the second and third lumbar segments. It ascends as far as the inferior surface of the pancreas. At the level of the first or second lumbar vertebra, this ascending portion bends abruptly forward, forming the duodenojejunal flexure, and then passes into the jejunum. This terminal portion is fixed by the muscle of Treitz, which is attached above to the strong connective tissue around the celiac artery as well as to the left crus of the diaphragm, thereby making this portion firmly fixed.

REPORT OF CASE

Mrs. R. J., age thirty-six, was admitted to hospital January 7, 1932. She complained of feeling nauseated, had a gaseous indigestion and had been vomiting for the past five weeks. She had a dull aching type of pain over the entire abdomen, but it was more marked in the right upper quadrant. She said she felt a fullness in this quadrant, always noted a rumbling of gas and felt better when lying on her abdomen. She had been advised to have an exploratory laparotomy.

In the review of her past history she stated that she had had a gaseous indigestion for the past fourteen to fifteen years. Thirteen years ago the appendix was removed. This did not relieve her condition except when she was convalescing. Otherwise the past history is of no moment.

Physical Examination.—Slender, asthenic habitus, abdominal muscles flaccid. Moderate tenderness over the entire abdomen, but more marked in the right upper portion. The intestines were distended with gas. The liver was not enlarged. The heart and lungs were normal.

Laboratory Findings.—Blood: Red blood cells, 4,329,000; hemoglobin, 70 per cent; white blood cells, 9,400; with normal numbers of various types. Blood sugar, 90.

Urine: Negative for sugar and albumen.

Gastric analysis: There was a moderate amount of mucus, slightly bile-tinged. The free HCl and combined acids within normal limits.

Duodenal drainage: Excessive amounts of mucus, food remains were found of meal eaten eighteen hours previously. Bile contained a few pus cells and slightly increased amount of mucus.

X-ray report: This examination revealed a ptotic stomach. The pylorus was retracted to the right side. There were no signs of a peptic ulcer.

The filling of the first portion of the duodenum was considerably delayed, but remained filled throughout the examination. Peristalsis was very inactive. The first, second, and third portions of the duodenum were moderately dilated.

A diagnosis of duodenal stasis was made in view of the history of a gaseous indigestion persisting for several years; the finding of food remains in the duodenum after eighteen hours, and the x-ray findings noted above.

Treatment consisted of rest in bed, knee-chest position q. 4 h, a high caloric diet with a minimum amount of roughage fed six times per day, exercises to give tone to the abdominal muscles, and sodium cacodylate, grain ¼, three times a day.

She improved very satisfactorily on this regimen and after one month was permitted to be out of bed. At this time she was instructed to wear an abdominal support, but also to continue with her abdominal exercises. Her weight has continued to increase and she has been free from her intestinal symptoms.

COMMENT

Glenard,[1] in 1889, expressed the opinion that a ptosed stomach caused dilatation of the duodenum. This observation was also verified by Adams,[2] who states:

> The obvious difficulty in accepting chronic duodenal ileus as a clinical entity is the fact that compression of the duodenum by the mesenteric vessels is likely to be a congenital defect. The symptoms are rarely manifest before the age of twenty. The cumulative effects of viceroptosis may be claimed as the determining factor in the causation of the symptoms. If this be entirely so, x-ray should demonstrate a viceroptosis in nearly all cases, but only about 25 per cent of them exhibit this condition. While on the other hand, a gastroptosis was noted in 75 per cent of the cases.

Wilkie,[3] in describing the pathological anatomy, states that the salient feature of the condition is the dilatation of the first three parts of the duodenum up to the crossing of the mesenteric vessels. The dilatation in the chronic type may be so pronounced as to resemble a second stomach. The duodenal wall is hypertrophied. The pylorus is usually dilated, although this is not invariable. The clinical picture is modified when the pylorus retains its tonicity. If the duodenum is distended at the time of the examination and a finger be passed behind the root of the mesentery and the latter lifted forward, the duodenal content will immediately pass on and fill up the duodenojejunal loop.

In the less severe types of cases, as pointed out by Adams,[2] in which a tentative diagnosis of gall-bladder disease is made and when the patient is opened no gall-bladder pathology is found, the pyloric vein is noted to be horizontal instead of perpendicular, the first part of the duodenum is pulled down to a vertical position and the entire duodenum is pulled around the head of the pancreas, displacing the latter forward.

The majority of these sufferers are emaciated, of asthenic habitus, and many times have neurasthenic tendencies. One of the prime requisites is to put weight on them. If they are unable to retain food, jejunal feeding may be resorted to. Bockus[4] advises passing the tube and leaving it in position for three weeks if necessary, especially in the severe types.

The diet should be a high caloric, high vitamin, smooth diet, taken in small quantities at frequent intervals. The calories should be figured so as to insure weight gain.

When the patient is in bed instructions should be given to lie on the abdomen or on the sides as much as possible. After becoming ambulatory an abdominal support should be worn until an appropriate weight gain is attained. All patients should be instructed to take postural exercises. The knee-chest position and the Goldthwaite diaphragmatic exercises prove beneficial in developing tone to the muscles of the abdominal wall which in turn helps to alleviate the visceroptosis.

Massage, abdominal and general, electrotherapy and hydrotherapy, and tonics, all contribute to the general physical improvement.

Duodenojejunostomy has been performed with very satisfactory results. It is, without doubt, the operation of choice. If a duodenal ulcer is associated with a duodenal occlusion, Wilkie and others recommend a combined gastro-enterostomy and duodenojejunostomy.

All patients suffering from a functional ileus should have the advantage of an adequate medical regimen before surgery is attempted.

6381 Hollywood Boulevard.

REFERENCES

1. Glenard: Del' Enteroptose, Presse Med., Belge, 1889.
2. Adams: Brit. J. Surg., Vol. xiv, No. 53.
3. Wilkie: Brit. J. Surg., Vol. ix, No. 34.
4. Bockus, H. L.: Northwest Med., Vol. xxix, No. 2 (Feb.), 1930; No. 3 (March), 1930.

CARCINOID APPENDIX

By Walter J. Sullivan, M. D.
Los Angeles

INFLAMMATIONS of the appendix are common. From a clinical standpoint they are divided into the acute and chronic types. Sections are easy to diagnose and, as a rule, present no unusual features. Tumors of the appendix are rare. They may be benign or malignant, primary or secondary. Benign tumors are unusual. Deaver, in his extensive appendiceal work, demonstrated fibroleiomyoma only on one or two occasions.[1] MacCarthy of the Mayo Clinic showed approximately that one in 225 appendices removed is cancerous at the tip. The clinical course of a malignancy of the appendix is that of a chronic interstitial appendicitis. It can only be diagnosed by appendectomy and section. Of the two types of epithelial tumors arising in the appendix, we find: (1) True carcinomata; and (2) a nonmalignant tumor which presents on section, according to H. Reid and H. Smith,[2] "an endothelial proliferation resulting from inflammation of displaced epithelial cells. The usual round-cell infiltration is absent and the connective tissue retains its acidophilic properties." The term "carcinoid" has been applied to this second type.

Regarding the above pathologic diagnosis, the following case history of an appendix recently removed is presented.

REPORT OF CASE

History.—The patient, a female, age fifty-two, white and married, the mother of two grown children, with a negative pelvic history, was admitted to the Queen of the Angels Hospital on May 17, 1932. She complained of a bearing-down pain in the lower right abdominal region, extending over to her bladder. This pain started early Sunday morning, May 15, 1932, and persisted all day. During the day she passed a great deal of gas. She was not nauseated nor did she vomit. Sunday afternoon she took an enema without relief of pain. Sunday night the pain extended over toward her right groin. The pain persisted all day Monday, without any other symptoms and no elevation of temperature. Tuesday morning she vomited for the first time, after a dose of Epsom salts. A physician was called and the examination revealed slight pain, some rigidity, and a moderate degree of tenderness over the right iliac fossa. Her temperature, pulse, and respiration were normal. A diagnosis of an acute appendicitis was made and the patient was removed to the Queen of the Angels Hospital. Her blood count at that time showed a 99 per cent hemoglobin. A color index of 0.86 erythrocytes, 5,664,000 which appeared normal. Her leukocytes were 11,500 with small lymphocytes of 18 per cent, transitional 2 per cent, and polymorphonuclears of 80 per cent. An internal examination demonstrated the pelvis to be negative. An examination of the cervix with the speculum showed a slight enlargement, redness and protrusion of the mucous membrane into the cervical canal. A flat K-U-B picture was negative, as was the urine, blood pressure, and Wassermann.

Operation.—A low spinal anesthetic was administered, and a mid-line incision extending from the pubic bone to the umbilicus was employed. A mass the size of a hen's egg was palpated in the ileocecal region. On gentle separation of the terminal ileum from the cecum, a gelatinous mass resembling mucus, about two drams in amount, was observed protruding from the side of the appendix. A small hole in the side of a rather broadened appendix, which resembled a diverticulum, permitted the escape of more of the same material. The appendix was removed. Pagenstecher linen was employed throughout. There was no thickening of the appendiceal base. An inspection of the abdomen was negative, with the exception of the gallbladder, which was enlarged and contained several stones. The abdomen was closed in the usual manner without drainage. A small section of the cervix was removed and sent to the laboratory for diagnostic purposes. The report from the cervical section was negative. The patient made an uneventful recovery and left the hospital on the eighth day.

Pathologic Report.—Paraffin sections were made from four blocks of the appendix. Section from one block showed the epithelium to be thrown up into papillary or serrated projections. Each one has a small central core with several layers of large epithelial cells, some having hyperchromatic nuclei. A number of mitotic figures are seen. There is no invasion of the fibrous tissue beneath. There is some round-cell infiltration in the submucosa. In the muscle wall there are longitudinal clear spaces, showing a fibrinous-like network in which are seen round cells and eosinophils. The serous surface is thickened and fatty, and shows scattered round cells.

Another section shows a hyperplasia of the superficial epithelium without the papillary appearance. There are irregular glands with epithelial cells like those in the first section. In places there are masses of epithelial cells beneath the surface. Each mass has an irregular lumen. These masses are only a short distance beneath the surface and may be due to tangenital section. In the muscle and fibrous tissue there is a marked round cell and eosinophilic infiltration. . . . Section of a third block gives a picture like that of the first block. . . . Sections from a fourth block show large areas having a fibrilla structure in the meshes of which is basic staining, colloid-like material. There are thick bands of fibrous tissue between the colloid areas and the trabeculae dividing up the area. The fibrous tissue shows round cell and eosinophilic infiltration and scattered polymorphonuclear leukocytes.

The appearance is that of a colloid carcinoma which in the appendix is very benign. They are called carcinoids.

Diagnosis: Carcinoid of the appendix.

COMMENT

According to E. S. J. King,[3] "epithelial tumors arising in the appendix are of two kinds: (1) true carcinomata, rare in occurrence; (2) nonmalignant carcinoids, more common." Carcinoid tumors occur usually in young people and are observed in about 0.4 per cent of all appendiceal lesions in King's experience. Carcinoid tumors may occur in any part of the alimentary canal from the cardia to the anus, but are usually noted in the region of the appendix, in which location the following types have been observed:

1. A hard, circumscribed nodule at the tip of the appendix which measures up to 18 millimeters in diameter and when sectioned has a uniform yellow color.
2. A nodule obliterating the lumen of the tube.
3. Rare diffuse type resulting from invasion of the muscular layer by the tumor cells.
4. The multiple tumor masses.

The most likely theory concerning the origin of these tumors is that they are (1) entodermal, and (2) ectodermal. The structure of the typical tumor with its spheroidal argentaffin cells, that is, cells containing granules capable of reducing silver preparations, closely resembling the structure of many brain tumors, gliomata of the retina, neurocytomata of the adrenal and other neoplasms of the nervous tissue origin. On this account King believes that these carcinoid tumors arise from nervous cells most likely derived from the sympathetic system.

H. Reid and H. Smith [4] state that the condition as a rule is benign but several cases of metastasis to the liver, the peritoneum, and the lymph nodes are on record. The growth as a rule is confined to the mucous and the submucous layers, with a tendency to infiltrate into the muscularis. Various types of cells include the spheroid (the most common type), cuboidal, cylindrical, endothelial, and mixed types. Colloid degeneration has also been noted.

Of primary interest in this case is the diagnosis of a carcinoid appendix which is considered a nonmalignant epithelial tumor. According to H. Reid there are, nevertheless, on record several cases of metastasis to the liver, peritoneum, and the lymph nodes.[5]

Of added interest, and a factor which should not be overlooked on account of subsequent possible pathology, is the gelatinous material which was observed protruding from the side of the ruptured appendix. No report was returned on this material although it was sent to the laboratory with the appendix for diagnosis. It is a well-known fact that leakage from a mucocele of the appendix may spread throughout the peritoneal cavity and cause death from mechanical obstruction. According to Frank, in his book on gynecological pathology, he states: "In the majority of cases epithelial cells are contained in the pseudomucinous mass. These cells continue to secrete, form gland complexes and cysts. No invasive tendency is shown, the organ being wrapped (but not penetrated) in a jelly-like envelope. Because of the physical properties, the peritoneum cannot readily absorb the gelatinous substance which closes the subperitoneal lymphatics. A foreign body peritonitis results. (Granulation tissue, giant cell and connective tissue production, endothelial proliferation.) The cellular elements produced by the peritoneum penetrate the inert colloid and form septa and encapsulated masses. If the source of supply is not cut off by removal of the primary focus, or if secreting cells are contained in the jell, incredibly large amounts of pseudomucin may be produced. Biggs removed 350 pounds of this material in twelve operations in a period of nine years before the patient died at seventy-five. A few cures are reported after repeated operation; seventeen recoveries in forty cases."

V. Lieblein,[6] writing of rupture of appendiceal mucocele, refers to thirty-five surgically treated cases of pseudomyxoma peritonei of appendiceal origin in which nine deaths occurred.

Since the operation of this patient three months ago, she has complained of a fullness and soreness to the right of her bladder. The patient will be carefully watched and reported on, if any unusual symptoms occur.

209 Security Bank Building.

REFERENCES

1. The Cyclopedia of Med., 1:752.
2. Reid, H., and Smith, H.: Brit. M. J., 1:492 (March 15), 1930.
3. King, E. S. J.: J. Coll. Surgeons, Australasia, 2:364 (March), 1930.
4. Reid, H., and Smith, H.: Brit. M. J., 1:492 (March 15), 1930.
5. Reid, H., and Smith, H.: Brit. M. J., 1:492 (March 15), 1930.
6. Lieblein: Beitr. Z. klin. Chir., 147:179, 1929.

FOREIGN BODY IN THE ISCHIORECTAL SPACE

By David N. Yaker, M. D.
Los Angeles

MANY cases have been reported in which chicken bones, fish bones, seeds, and similar small objects have been recovered from diseased crypts of Morgagni; and that upon removal of these there has been almost immediate relief from symptoms. At times, fish bones, or rather small foreign bodies, have penetrated the rectal mucosa and entered the ischiorectal spaces, where an inflammatory process was set up and an abscess resulted.

I wish to report a rather unusual case which just recently came under my observation.

REPORT OF CASE

On August 20, 1931, a male, age fifty-one, presented himself at the rectal clinic of the Cedars of Lebanon Hospital complaining of severe pain in the rectum, of ten days' duration. The patient thought that the pain came on rather suddenly when he had strained at stool. He stated that the pain had been more or less constant during this period, and was aggravated by bowel movement. He could get little or no relief from heat locally, and no relief from the use of suppositories.

Examination revealed a swelling, the size of an orange, in the left ischiorectal region. This was hard and very painful to the touch. There was no fluctuation present. Rectal examination aided in the diagnosis of ischiorectal abscess. The pulse and temperature were normal.

The next day, under gas-oxygen-ether anesthesia, the man was operated on. An incision was made into the hard indurated area. Very little pus was found; but on investigation a large spicule of chicken bone, one and one-quarter inches long and one-quarter inch wide, with very pointed ends, was found lying in the abscess. A large probe was passed into the wound, and this very easily entered the rectum through one of the crypts of Morgagni. The inflamed area was laid wide open and much of the indurated tissue excised. Further examination of the rectum revealed four deep crypts, which were also excised. The patient made a very uneventful recovery, being carefully watched so that the wound would heal from the bottom out.

The probability in this case, and the interesting point is that the bone, large as it was and pointed at its ends, passed through the entire gastro-intestinal tract without doing any damage, only to lodge in one of the crypts and then invade the ischiorectal space. It also emphasizes the part played by these crypts in the formation of abscesses and fistulas, as brought out in a recent paper by Buie of the Mayo Clinic and in a more recent paper by McKenney of Buffalo. It might be added that the patient did not recall the exact time of swallowing the bone.

Roosevelt Building, 727 West Seventh Street.

Ground Squirrels Carry Plague.—Plague is primarily a disease of rodents, and secondarily and accidentally a disease of man. Man's safety from the disease lies in the exclusion of the rodent and his parasites. This is the basis of all preventive and eradicative work. If man can live in rodent-free surroundings he need have no fear of plague, because if there be no rodents there can be no rodent parasites, and for all practical purposes the flea may be considered as the common vector of the disease from rodent to rodent and from rodent to man. The eradication of bubonic plague, therefore, means the eradication of rodents.

In America we have two rodents which are comprehended in this problem, the rat and the ground squirrel, and apparently each plays a very distinct rôle in the propagation and perpetuation of the disease. The rat (*Mus norwegicus, M. rattus, M. alexandrinus,* and *M. musculus*) is distinctly domestic in its habits, and therefore comes in more or less intimate contact with man. It is also a frequenter of the great highways of the world, traveling long distances in ships and to a limited extent on trains. It is the producer of acute outbreaks, the conduit for the carriage of the virus from its perpetuating reservoir to the body of man. The ground squirrel (*Citellus beechyi*), on the contrary, is not a dweller in human habitations, does not travel except by short migrations, and is an almost negligible factor in the direct transfer of the disease to man. Its great function in the plague scheme is that of a rural reservoir from which from time to time the disease flows over to the suburban rat, thence to his city cousin, and thence to man. This condition is not peculiar to America alone, since in China and Thibet the marmota (*Arctomys bobac*) and allied species perform a similar function.—*Weekly Bulletin, California Department of Public Health.*

Changes Proposed in Federal Food and Drugs Act.—A redraft of the Federal Food and Drugs Act has been completed and submitted to the Department of Justice for review. Provision is made for the expansion of the Act to include cosmetics and to regulate the advertising of foods, drugs, and cosmetics, but it does not propose the censorship of advertising in advance of its use. It does provide, however, that false advertising shall be classed as illegal and the responsibility for truthful advertising is placed squarely upon manufacturer and distributor.

Among other provisions in the proposed redraft of the Act are the following:

1. Authorization to the Secretary of Agriculture to establish food standards having the force and effect of law.
2. A fully informative label regarding the ingredients of a product.
3. Elimination of slack filling of containers and the use of deceptively shaped packages.
4. Inspection of food and drugs at point of origin.
5. Strengthening the present law relating to poisonous or other added deleterious ingredients which might render food harmful to health.
6. Declaration of the presence of dangerous drugs on the labels of products with possible restriction on the sale of dangerous drugs.
7. Strengthening the present law relative to the sale of drugs which bear false and fraudulent therapeutic claims.
8. Inclusion in the definition of drugs of mechanical devices intended for the treatment of disease.

These indicate the most important of the proposed changes in the Act. The general public has been invited by the Food and Drugs Administration of the United States Department of Agriculture to express its opinions relative to these proposed changes and to suggest other changes that might make the Food and Drugs Act more effective in the protection of the general public health.—*Weekly Bulletin, California Department of Public Health.*

Physician's Part in Public Health Activities.— The physician is the keynote that supports the whole structure of public health. Many other professions have definite and important places in the structure, but without the physician no adequate structure may be built up.

The physician, alone, would be helpless without the chemist, the engineer, the dentist, the nurse, and all those other important professions that supply scientific material that goes to build up our wonderful preventive health measures for the conservation of life.

Scientific discovery has given us abundance of health conservation material and the part played by the physician both in the discovery and in the practical working out of the same on the patients is reason enough why the physician should be placed in the highest positions of public health.

All physicians may not, in fact, do not always recognize public health as their most important work. Yet the reason is not difficult to find. The doctor's work is with the sick patient for the most part, and that this is so is not always the physician's wish, but seems necessary because of the public's fallacious idea that he wishes only to be consulted at such times.

Already this situation is changing, due to a better understanding by the public that the physician, by training, may render advice and service that will keep us well and also by an awakening on the part of the physician that preventive medicine is a field that should and can be covered by the general practitioner. (Dr. Charles Duncan, Secretary, Board of Health, State of New Hampshire.)—*Weekly Bulletin, California Department of Public Health.*

BEDSIDE MEDICINE FOR BEDSIDE DOCTORS

An Open Forum for brief discussions of the workaday problems of the bedside doctor. Suggestions of subjects for discussions invited.

MIGRAINE

Edward W. Twitchell, M. D. (909 Hyde Street, San Francisco).—*Symptoms.* The symptomatology of migraine in its several forms is so varied that anything like a full description of it would fill pages, but an enumeration and discussion of the most important symptoms can be done in moderate space. Christiansen declares migraine to be one of the nervous affections which physicians who are not neurologists most frequently fail to recognize; and this will be true particularly of the so-called *formes frustes.* A physician who for years had fortification spectra which were only occasionally followed by headache never knew what he was seeing until he came upon Airy's picture in the article in the Osler System on migraine; and Charcot's own experience was strikingly similar. It must be remembered that migraine is very common, and also that many patients take it for granted and never consult a physician concerning it.

There is a general feeling that migraine is confined chiefly to the educated classes; that, in fact, the having of migraine confers a sort of intellectual distinction. If, however, one looks over his case histories, he will find among the teachers, executives, clerks, and lawyers listed there an occasional farmer, craftsman, or laborer, so that a laborious outdoor life by no means confers immunity.

Any periodic headache, especially one which the patient gives a history of having had from an early age, must at once be suspected; although it is true that many characteristic migraines do not make their appearance until the thirties or later; and while women seem to be more often afflicted than men, this predominance among women is not very great.

Classically considered, migraine makes its appearance in the morning, when the patient, after a sound sleep, and having felt perfectly well the day before (and migraine patients have a way of being perfectly well at intervals), awakens with the sensations which he has long learned to interpret as forerunners of another attack. During the night he may have had unpleasant dreams. At first there may be merely a sense of sleepiness with yawning, a little heaviness in the head, a sense of weakness and exhaustion, and a lack of the usual mental alertness. Often there is irritability and restlessness. There may have been hints of some of these things for a day or two before. Shortly before the onset of the attack, there is often a sensation of chilliness. Less commonly there will be a feeling of oppression in the chest and symptoms referable to the digestive tract, such as salivation, fierce hunger or thirst, colics, or diarrhea. In the ophthalmic variety, which by some is called the only true migraine, there may be hallucinations of sight and of smell, with certain parasthesias and more or less marked aphasia.

After the premonitory stage is passed, as a rule begins the headache, which varies greatly in severity. There are undoubtedly attacks in which the headache is almost if not entirely absent; despite Grasset, who declared there was no migraine without pain. This will be contradicted by anyone whose two successive attacks will be all but identical except for the fact that in one the headache is lacking. This headache is described variously as boring, pounding, pressing, tearing, and especially bursting. Some have declared that they could feel a separation of the sutures, and Salpart van Derviel, cited by Christiansen, declared that a spreading of the coronal suture at the height of the attack was noted in one case. As the intensity of pain increases, the slightest noise or light or movement becomes unbearable; hence the patient shuts himself up in a darkened room, excluding as far as possible all noise from the rest of the house. The pain is by no means exclusively a hemicrania in the sense of its being one-sided, although in many cases it may be very definitely so. It may settle in any part of the head or even in the lower jaw; but the frontal region is a preferred site.

Concommitantly with the pain, in most instances appear the digestive disturbances, namely, nausea and vomiting. This upset condition of the stomach is the reason for the popular name of sick headache. In many instances there is nothing more than nausea of greater or less degree, or it may go on the point of the vomiting, which characterizes so many cases, and this vomiting will be repeated until the patient is practically beside himself, as the retching and straining adds immeasurably to the headache. At this point may be noted also symptoms referable to the autonomic nervous system. In one case the face will be greatly flushed, while in another there may be a pallor. This has led some authors to describe a *migraine blanche* or *sympathicotonique,* and a *migraine rouge* or *angioparalytique.* Other symptoms referable to the sympathetic are micosis, exophthalmos, and tachycardia. Some cases are characterized by great mental depression, the so-called black migraine.

As the day wears on, the symptoms eventually begin to grow less intense until finally, toward evening, the patient drops off into a sleep, generally awakening to find that the headache has disappeared completely and that, barring some weakness and exhaustion, he is quite as well as ever. Oftentimes the attack ends with a nosebleed, a profuse salivation, a diarrhea, a polyuria or a fainting. Whereas, too, the average attack ends thus within the day, in twelve or twenty-four hours, exceptionally it may go on to forty-eight hours or longer; and whereas the frequency of the attacks will be every two or four weeks, they may come very much oftener and in some instances there may even be what Feré called an *état de mal*, in which there will be a continuous series of attacks. So far we have been describing the ordinary or *simple migraine*.

To some authors the only true migraine is the so-called *ophthalmic migraine,* which is characterized by certain manifestations referable to the eyes. In addition to the other premonitory symptoms, there will be noted such things as flickering, a sensation of cloudiness, and the appearance possibly of a black spot. At the same time there may be head noises and a metallic taste in the mouth. Then may come either an amblyopia or certain spectra, or alternation of amblyopia and spectra. Sometimes a blindness will exist alone and this blindness may be either unilateral or bilateral, or it may be a hemianopsia. At other times the spectra already mentioned will be the chief characteristic, a little spot tinged with color and widening like the ripples in a pond, and a new spot forming and again widening. Sometimes the zig-zag line which bounds the ripple, and from which the name fortification comes, will be varicolored, while in other instances it will be simply golden. In addition to the metallic taste already mentioned may be other parasthesias, and also frequently associated with this ophthalmic type are the aphasias which for the most part are of the motor sort, although rarely we may see word deafness. In some cases there will be pronounced mental symptoms which have caused this type to be designated as *hemicrania psychica*. Here there may be a certain amount of confusion and hallucinations of sight and hearing, and a transitory maniacal state. The headache in the ophthalmic type is generally described as being severer than in the ordinary type although, as already stated, an attack of the ophthalmic type may begin and end with the spectra. In other respects the ophthalmic type will be similar to the simple type already described. As a subvariety of the ophthalmic type may be described the ophthalmoplegic type in which, in addition to many of the symptoms already described, there will be a paralysis of the third nerve; and this ophthalmoplegia is sometimes a total internal and external one. Here the headache is generally a one-sided one, and on the side of the palsy. Other nerves involved are the fifth, seventh, and twelfth. This type is much less common than the others; Flatau reported but two in fifteen hundred cases. Christiansen says that the ophthalmoplegic type is often discovered later to be simply a phase in the development of a meningitis or a brain tumor.

Oppenheim had a patient in whom each attack was accompanied by cerebellar symptoms such as dizziness and cerebellar ataxias. On the basis of this case he postulated a cerebellar type which has from time to time been described by others.

Diagnosis.—As a rule this is very easy, and the patient could make it himself if he had the vocabulary. A periodicity with complete freedom from symptoms between attacks is generally impossible to overlook. As Christiansen remarks, the symptoms are invariably associated with the attack and are never after-effects, as in epilepsy. When symptoms are found coming after the attack, a complication must be suspected. In the case of ophthalmoplegic migraine especially, must one be prepared to find such things as meningitis, tumor, and the like. Confusion with sensory epilepsy is warned against, but the aura in epilepsy is short as compared with the aura in those cases of migraine with manifestations of cortical irritation. Toxic headaches of all sorts must be ruled out, and can be if care be taken. The same is true of the headaches of neurosyphilis, of the anemias, of sinus disease and of organic brain disease, such as meningitis or tumor. Certainly, error here will soon be cleared if the patient be carefully and continuously observed. The neurasthenic or hysterical headache may give trouble at times; but if the history be carefully taken and the patient repeatedly observed, the migraine headache will differentiate itself in its beginning, its course and its ending, from the neurotic one, and this in spite of the fact that neurasthenics and hysterics have migraine, too.

* * *

LeRoy Briggs, M. D. (384 Post Street, San Francisco).—*Prognosis and Treatment.* In dealing with the question of prognosis in migraine, one is concerned only with the future of the attacks themselves and not with the patient as a whole, since there is never any menace toward life. In the vast majority of instances the outlook for recovery is excellent, provided the patient lives long enough, as the disease eventually stops spontaneously somewhere around the sixth decade. This cessation may occur abruptly, but more commonly the attacks become milder and less frequent for some years before ceasing entirely. Possibly to be considered with the prognosis is the very rare instance of the transmutation of migraine into epilepsy, with all the significance that the latter disease carries.

In any discussion of the treatment of true migraine we must at the start face two fundamental facts: first, that we are dealing with a disease in which there is no known pathology, no possible objective means of diagnosis, and therefore no specific line of therapy; and second, as has just been mentioned, the so-called cure is effected solely by time, and occurs spontaneously and irrespective of all therapeutic measures.

We have, however, two lines of attack in attempting to help the unfortunate sufferer. Primarily, and most important, is to devise means of diminishing the frequency and intensity of the headaches, and secondarily, are the purely symptomatic measures for the relief of pain. It is with the first situation that real constructive aid may be rendered.

It has long been recognized that fatigue, worry, excitement, or any psychic trauma almost invariably precipitate attacks of migraine in sufferers from the disease. A common clinical observation is to find patients who have gone along for years averaging an attack a month, jumping up to one or two a week under some mental strain. Many a patient has wondered at the seeming coincidence of having an eagerly anticipated pleasure completely ruined by awakening with a headache on the long-expected day, and has marveled at the devilish perversity of his Nemesis. The wonder has always been that these persons, intelligent as they usually are, so rarely recognize this provocative relationship, and it behooves us, therefore, definitely to instruct them as to the importance of mental hygiene in the relief of their trouble.

In this day of high-tension life, hedged about by innumerable inhibitions, it is well-nigh impossible to secure the placidity so necessary for a minimization of strain, yet a great deal may be accomplished through the dual medium of intelligent instruction and willing coöperation. The strict avoidance by these patients of unnecessary burdens, as committee and club work, and those various other extramural activities which take such toll of our time and temper; the interdiction of much of our so-called "sport," which is not play at all but intensive competitive endeavor; and the realization that life may be very full and happy even though supremacy be not obtained, are all lessons which if learnt will do much to smoothe the migrainous pathway. The unavoidable mental hazards of life may not be dodged, but the development of a philosophy which will permit of an equanimity of spirit in spite of them, may achieve great results.

Although the correction of psychic faults is preeminent, the rectifying of any physical defect is of considerable importance. Possibly because of the demand by the layman for tangible efforts this latter has attained a position relatively greater than it deserves, especially in comparison with the former. The eradication of diseased tonsils, abscessed teeth, infected gall-bladders, may benefit the sufferer but will never cure migraine. Attention to refractive errors may make reading easier and clear up so-called eyestrain headaches, but it ends there. Smoothing out peristaltic difficulties by training, proper diet, and a minimum of drugs, will give the anxious patient confidence and help eliminate the constipation phobia, but that is all. Acquirement of a better posture and the development of a good musculature through systematic exercise will bring about a feeling of well-being that will make life more enjoyable, for, after all, *mens sana in corpore sano* is a pretty sound doctrine. All these various things (and others if necessary) should be accomplished to bring about as ideal a state of bodily health and hygiene as possible—done with the distinct understanding that a cure is not to be expected, but that diminution in frequency and an amelioration in severity of the headaches is all that can optimistically be hoped for. Obviously this must be true, as a diseased organ or a disordered function cannot be the cause but only a possible exciting or contributing factor.

One special word as regards diet. The mere fact that nearly every diet imaginable has been recommended should be sufficient in itself to denote the futility of seeking a cure in that direction. Every possible combination has been advocated, the results varying with the enthusiasm of the observer. Before yielding to the siren call of the dietary faddist, it is recommended as a preliminary measure to learn from a group of migraine sufferers just what each considers the absolute cause of his attack. The lack of unanimity should produce such a healthy feeling of skepticism that further steps will be taken most discreetly.

If many measures have been attempted as a cure of the disease, their number is but small as compared with the drugs and procedures advocated for the relief of the actual headache. Here again we have a deterrent in our hope for a panacea. Each physician may have his own favorite remedy, but no two patients find relief in the same thing, a fact not insignificant. So often the nausea and vomiting preclude the giving of anything by mouth. Inasmuch as we are dealing with a disease of long standing, drugs of the opium group absolutely should be interdicted. One's personal feelings tend to prolonged mild sedation between attacks, as in epilepsy, with more vigorous action during or, if possible, just preceding the headache. To accomplish this either the bromids or phenobarbital are the drugs of choice. The more strenuous measures of protein shock or radiation of the head for relief of pain should be used with the greatest of caution and only in the most prolonged and intractable of attacks.

Possibly much of the reputed virtue of the therapeutic agent is inherent in the confidence with which it is prescribed, rather than in what it intrinsically possesses. When all is said and done, the majority of sufferers, discouraged by the failure of many therapeutic experiments, eventually will follow out their own line of procedure—the quiet darkened room, absolute rest in bed, the hot or cold application, with as much stoicism as they can muster, to await the relief which time inevitably will bring. And, after all, what better treatment of migraine is there?

* * *

Gordon E. Hein, M. D. (San Francisco Hospital, San Francisco).—Migraine is seldom hard to recognize if sufficient time for observation is allowed: a story of "sick headaches" in one or both parents as well as in other members of the family, of periodic recurrence, and of progressive development of the complete attack, ending in remarkable temporary recovery, seldom causes uncertainty as to a name for the condition.

The unfolding of the complete atttack has always been of interest to me. For a given individual the type of attack rarely varies, and in most sufferers the attacks are very similar. The victim awakes in the morning knowing that he will have an attack unless it can be aborted. A curious heaviness and mental sluggishness, often accompanied by visual disturbances varying from slight indistinctness of vision to colored fortification spectra and even blindness, partial or complete, warn him of phenomena which he knows will follow. Even at this time inequalities of pupils may be noted as well as changes in expression and color of the skin. An appearance of tiredness or sleepiness, with drooping eyelids and frequent yawning, often occur at this period.

Other widespread sensory changes, such as tingling or numbness of extremities and abnormal sensitivity to external stimuli, light, heat, pressure, noise, tobacco smoke, etc., are soon succeeded by headache, followed in turn by nausea and vomiting which precede recovery. The sequence of premonitory apathy, sensory phenomena, headache, nausea, vomiting, followed by recovery, is fairly constant. Motor aura are rare.

The course is not evenly progressive. Nausea comes and goes. Headache becomes alternately less marked or intensified.

The speed with which recovery takes place is dramatic. A patient may have been ill for a week and within a few hours may feel perfectly well; although many prefer to sleep following an attack and feel completely recovered upon arising.

Of more interest to me are the factors which modify the course. Migraine tends to disappear at the end of life, but not always. Why?

Attacks are precipitated and increased in frequency by emotional or mental strain. It is not hard to predict an attack in a migrainous individual if he is under observation, and I have a feeling that migraine is of value to its possessor in calling a halt upon excessive activity.

Women with frequent migraine attacks may be entirely free from them, and usually are, during pregnancy. Why? If we had the answer, I am sure that our therapy would be more satisfactory.

Some patients with migraine seem to think that they are sensitive to particular foods, and some apparently improve upon careful attention to diet. The fact that many different foods are held causative by various patients may mean that we have much yet to learn about individual sensitivity to particular foods or portions thereof.

Occasional episodes are seen in migrainous individuals characterized by abdominal pain, nausea, and vomiting. At times these episodes are followed by characteristic headache, at other times not, but in either instance they add appreciably to the diagnostic difficulty. The abdominal pain leaves as abruptly as the headache, and in all likelihood is closely related.

For relief of the attack of migraine, each sufferer has his own favorite procedure. After the premonitory warnings have been noted, attacks may be avoided by diminishing the number and intensity of all external stimuli, and by resting. Sedatives such as bromids, phenobarbital, or sometimes vigorous catharsis, may suffice to stop further progress.

When pain has appeared, sodium salicylate or one of its various substitutes with one of the bromid preparations is of aid. The old combination of a gram of sodium salicylate and a gram of sodium bicarbonate in a cup of hot black coffee has given relief many times. A towel dipped in hot water and applied over the forehead relieves pain more often than cold in the form of an ice cap. After the attack is well developed and nausea has started, little absorption seems to take place from the gastro-intestinal tract, so that oral medication becomes of little avail. Plenty of warm water containing sodium bicarbonate and induced vomiting may shorten the attack.

I have seen a number of patients relieved by an ounce or two of whisky at this stage. Fortunately migraine attacks, after all, are self-limited.

The fact that attacks may disappear, during pregnancy for example, seems to offer hope that some day migraine may be prevented entirely.

Insulin.—The first speaker on insulin, the second main topic of the recent Congress on Disorders of Metabolism held at Vienna, was Staub of Basel, who called attention to the contrast between the pancreatic hormone and the hormone of the suprarenal glands and discussed the effects of insulin on the nervous system. He advanced a new theory in explanation of diabetes. He regards insulin as a hormone that acts on the parasympathicus and produces a reduction in the tonus of that system. Herxheimer presented facts connected with the history of diabetes. In 1845 it was first recognized that changes in the pancreas occur in diabetes. In 1889 Minkowski and Mering demonstrated that the removal of the pancreas produces diabetes. That same year the term "internal secretion" was introduced. A short time later it was shown that the pancreas consists of two parts; one part furnishes the ferments for the intestine, while the other portion, the islands of Langerhans, regulates sugar metabolism. Herxheimer pointed out that reduction or atrophy in the number of "cell islands," their induration and hyaline degeneration, are characteristic of diabetes. The cell islands resemble closely in structure the remaining tissues of the pancreas, and it is believed that their new formation from the other part of the gland is possible, as has been shown by the experimental ligation of the pancreatic duct in animals ("Mansfeld's effect"). The blood sugar drops then to one-eighth of its normal value. This rather difficult operation has been successfully carried out on man (young diabetic patients). No detailed reports, however, have been furnished as yet.

If You Are Interested in School Statistics.—If you are a student nurse, you are one of the 86,649 in the United States. Presumably you attend an accredited school of nursing, of which there are 1,656. Besides these there are 278 schools in the country that have not been able to meet the standards set for accrediting in the various states.

One out of every three or four hospitals in the United States conducts a school of nursing. The hospitals of the country employ 48,567 graduate nurses on a full-time basis for nursing only. Some 8,000 registered nurses are employed in the hospital for other than bedside duties.

These are figures compiled in 1933 by the Council on Medical Education and Hospitals of the American Medical Association. They agree, in general, with the statistics of the Committee on the Grading of Nursing Schools.

You have been told many times that there are too many nurses in this country. The American Medical Association has said repeatedly that there are too many doctors. Your professional organizations say that there are too many schools of nursing. It now appears that there are too many hospitals. Although this does not apply equally to all communities, the American Medical Association's figures show that there is an oversupply of hospital beds, and that the number of hospitals is increasing six times as fast as the population.—*The A. N. A. Bulletin.*

California and Western Medicine
Owned and Published by the
CALIFORNIA MEDICAL ASSOCIATION
Official Organ of the California and Nevada Medical Associations
FOUR FIFTY SUTTER, ROOM 2004, SAN FRANCISCO
Telephone Douglas 0062
Address communications to the EDITOR, as per the above address.

EDITOR . . . . GEORGE H. KRESS
Associate Editor for California . . . . EMMA W. POPE
Associate Editor for Nevada . . . . HORACE J. BROWN

Advertising Representative for Northern California . . . . L. J. FLYNN, 544 Market Street, San Francisco
Advertising Representative for Southern California . . . . . A. A. BUTTERWORTH, 223 E. Fourth Street, Los Angeles

Subscription prices, $5.00 ($6.00 for foreign countries); single copies, 50 cents.

Volumes begin with the first of January and the first of July. Subscriptions may commence at any time.

Change of Address.—Request for change of address should give both the old and the new address. No change in any address on the mailing list will be made until such change is requested by county secretaries or by the member concerned.

Advertisements.—The journal is published on the seventh of the month. Advertising copy must be received not later than the 15th of the month preceding issue. Advertising rates will be sent on request.

Responsibility for Statements and Conclusions in Original Articles.—Authors are responsible for all statements, conclusions and methods of presenting their subjects. These may or may not be in harmony with the views of the editorial staff. It is aimed to permit authors to have as wide latitude as the general policy of the journal and the demands on its space may permit. The right to reduce or reject any article is always reserved.

Contributions—Exclusive Publication.—Articles are accepted for publication on condition that they are contributed solely to this journal.

Leaflet Regarding Rules of Publication. — California and Western Medicine has prepared a leaflet explaining its rules regarding publication. This leaflet gives suggestions on the preparation of manuscripts and of illustrations. It is suggested that contributors to this journal write to its office requesting a copy of this leaflet.

EDITORIALS[*]

THE ALAMEDA AND SAN DIEGO MEDICAL SERVICE PLANS

The Economic Symposia of the Del Monte Annual Session.—At the annual session recently held at Del Monte, the first two of the general meetings were given over to a discussion of some current problems in medical economics. The interesting papers by Doctors Ray Lyman Wilbur of Stanford, Arthur C. Christie of Washington, D. C., and R. G. Leland of Chicago, given at the opening meeting, were printed in the May CALIFORNIA AND WESTERN MEDICINE. Members of the California Medical Association who failed to read those articles should try to do so when leisure presents. The essayists presented an excellent survey of some of the major topics now under discussion in the lay and professional press.

* * *

The Alameda and San Diego Medical Service Plans.—The current issue of CALIFORNIA AND WESTERN MEDICINE prints two additional articles, one by President George G. Reinle of Oakland and the other by Dr. Hall G. Holder of San Diego, dealing at length with two significant experiments now being tried out by two of the county medical societies of California. The plans are intended to provide ways and means whereby low-bracket income and indigent citizens may have ready access to skilled medical and surgical care. The economic and the professional obligations involved in the two procedures, and the manner in which they have thus far worked out in practice, are explained in considerable detail. These articles will be found on pages 1 and 6.

* * *

Why These Alameda and San Diego Plan Articles are Emphasized.—Attention is called to these plans in the hope that officers and committees of the county medical societies of California will give the same special consideration. The papers by Reinle and Holder also give valuable information on procedures having to do with local county hospital and clinic activities; and both are subjects of great importance to every county medical society and community in California.

It is possible that during the summer vacation months county medical society committees already existing or yet to be appointed may be able to make preliminary surveys of their respective local county hospital and clinic situations. Reports on such live topics would be received with real interest at the end of the summer vacation. In addition to the value accruing to every county society—if it compiled first-hand and accurate information on the care of its own low-bracket income and indigent citizens—there would be the further advantage of making such data available to the California Medical Association Department of Public Relations. The members of that important State Association committee have given most loyal and efficient service in their studies of some of the California problems which have to do with these, and related phases of medical practice; and further coöperative study by component county society committees will aid the movements greatly.

To appreciate properly what our colleagues in Alameda, San Diego, and other counties and communities are doing, it is necessary that all of us give of ourselves: first, in general study of these problems; and secondly, in active participation, as well as of thought in the making and carrying out of plans which aim at solution of some of the problems everywhere facing us. In proportion as we display real interest in these problems, we will find our own understanding of plans for such betterment much clarified.

THE USE OF THE INJUNCTION IN MEDICAL PRACTICE

A Recent Article in the American Medical Association Bulletin. — William C. Woodward, Director of the American Medical Association Bureau of Legal Medicine, in the American Medical Association *Bulletin* of May, 1933, calls attention to a recent decision of the West Virginia Supreme Court of Appeals, which presents some phases of legal procedure worthy of serious consideration by all who are interested in the maintenance of adequate professional standards.

---

[*] Editorials on subjects of scientific and clinical interest, contributed by members of the California Medical Association, are printed in the Editorial Comments column, which follows.

The enactment of a good state medical practice act is only a first step in the protection of the public from incompetent practitioners. The success of such a law depends not only upon the personnel of the examining board, but also upon the personnel in the investigation and legal departments of the board.

* * *

Importance of Personnel in Legal Department. When illegal practice by unlicensed practitioners becomes evident, many physicians are apt to think that the reason must be due to a poorly drawn state medical practice act. As a matter of fact, the explanation is not infrequently found to be dependent on the indifference or connivance of the duly constituted legal representatives of the state. Some of these legal officers at times, for reasons of political or other expediency, either close their eyes to the violation of medical licensure laws or perform their duties in medical statute enforcement in such half-hearted manner that the poor results obtained furnish a good alibi for stressing other work in their departments. That is why the personal attainments of the investigators and the attorney or attorneys for a board of medical examiners are so important.

* * *

Recent Changes in the Legal Department of the California Board of Medical Examiners.—On this point, attention may here be called to the fact that this year the California Legislature passed a measure (since signed by Governor James Rolph) whereby, supposedly in the interest of economy, the positions of the attorneys of some of the boards and bureaus of the state government were abolished. The legal work of such boards is hereafter to be carried on by a deputy or deputies of State Attorney General Webb, these deputies acting, when necessary, in conjunction with district or other local attorneys.

One of the state boards which lost its own attorney through this new law was the California Board of Medical Examiners. It is sincerely hoped that this new plan of legal operation will have no detrimental effects upon the work of our state examining board. For it is to be remembered that the Board of Medical Examiners during many years past has not received any moneys whatsoever from the general tax funds of California; and that the income from which its expenses have been paid was derived altogether from licensure and similar fees, all received from physicians. The reason physicians have sanctioned such special taxation of the members of their profession has been due to their great interest in the public health, and because they construe it to be important that proper legal standards of practice should be maintained by every commonwealth. During the next year it will be interesting to observe how the new legal arrangements for the California State Board of Medical Examiners will work out in practice, to be hoped for the best.

The Injunction Approach in the West Virginia Case.—Coming back to the decision of the West Virginia Court of Appeals of May 13, it is noted that the legal procedure used in that case, which was directed against an illegal practitioner, was not by way of a criminal action, but by means of a bill of complaint filed in a court of equity.

In other words, the illegal practitioner was not haled into court on a criminal action proceeding, because in a criminal action it would have been necessary to prove to the satisfaction of a jury—sometimes a very difficult task—that the unlicensed practitioner was carrying on his illegal practice "beyond a reasonable doubt." In the West Virginia case three licensed physicians, as citizens who felt they had been deprived of certain legal and property rights, went into a court of equity and petitioned that an injunction be granted to prevent the unlicensed practitioner from continuing to carry on his illegal practice.

The following excerpt from Woodward's article emphasizes some of the differences which arise in injunction and criminal proceedings:

> "In favor of the use of injunctions for the protection of the medical profession and of the public against the activities of unauthorized practitioners of medicine, it may be pointed out that prevention is the only safeguard against the damage that such practitioners may do, and prevention is afforded by injunctions only. Fines and imprisonment for offenses committed long ago do not afford relief from injuries from past misconduct nor protect against the consequences of offenses to be committed in the future. Injunctions are more effective, too, than are criminal prosecutions, because in criminal prosecutions the evidence of wrongdoing has to be proved beyond a reasonable doubt, to the satisfaction of a jury, and in event of acquittal no appeal can be taken by the prosecution, even though it may be desired to secure rulings of a higher court on what seem to be errors of law committed in the trial court. On the other hand, under the principles of the West Virginia case just decided, if a bill of complaint is filed in a court of equity, with a petition for an injunction, it need be shown to the satisfaction of the court only that the respondent practitioner is competing unlawfully with licensed practitioners and is a menace to the welfare of the people, and that there is no other adequate remedy for the situation—and this need be shown only by a preponderance of evidence. If the petition is denied by the trial court, the petitioner can appeal to higher courts, where all questions of law can be finally settled. . . ."

* * *

With the West Virginia decision now a matter of record, it is probable that in other states of the Union this procedure, by means of injunction, will receive further trial. On its face, the method seems to have much to commend it.

MAKING A WILL

Why Physicians Should Know Somewhat About Wills.—Believing that the subject would prove of great appeal to members, General Counsel Hartley F. Peart, Esq., of the California Medical Association was requested to write an article touching upon and illustrating the complexity of the problems pertaining to the making of wills, and on some of the more important statutes of California concerning community property rights and other interests in a decedent's estate. As General Counsel Peart points out, physicians, because of their confidential relations with patients, are frequently consulted by the latter with reference to the making of their wills; and it is often necessary for a physician to suggest that a patient get his earthly affairs in order. For these reasons, as well as for the personal information of members of the Association, it is hoped that the advice given by Mr. Peart will be found of value. The article referred to appears in this issue, page 20.

General Counsel Peart was for many years the inheritance tax attorney for the treasurer of the city and county of San Francisco, and thereafter special counsel for the state controller in a number of leading cases involving inheritance tax due to the state of California; including the estate of the late cattle baron, Henry Miller, in which an inheritance tax of over two million dollars was paid, after years of legal proceedings spent in determining and fixing the tax. The administration of the Inheritance Tax Act of California is directed to the fixing and assessing of such tax on the interests and property which pass from a decedent by reason of his death.

Singularly enough, the case of John Brown, mentioned in the article above referred to, pertains to a member of a doctor's family; and an inquiry sent by the editor to the general counsel concerning some features of that estate, resulted in a suggestion that the article be written.

DECREASED BUDGET OF STATE BOARD OF HEALTH

Dismissal on July 1 of some of the technically trained personnel of the California Department of Public Health, with the probability that some of the smaller full-time county health units will have to be abandoned, was recently announced by Dr. John H. Graves, president of the State Board of Public Health.

This action, Dr. Graves said, has become necessary as the result of a 20 per cent reduction made by the legislature to a budget which the department had previously reduced by 25 per cent.

Notices of their separation from the service have been given to a number of the department's employees; in the classifications that include pediatrician, public health nurse, sanitary engineer, bacteriologist, rodent hunters (bubonic plague) and stenographers.

On a coöperative basis, the state and federal public health departments have contributed toward maintenance of some of the California full-time health units. These funds have been matched by the Rockefeller Foundation. This financial support by state and federal governments is being withdrawn, which means there will be no further contributions from the Rockefeller Foundation. Unless the counties can raise their own funds—and they report this will not be possible—full-time health units which have been receiving this aid necessarily will be obliged to revert to their former status, with part-time health officers.

"The entire budget of the State Department of Public Health," Doctor Graves said, "was slaughtered by the so-called economy bloc in the legislature. The total appropriation allowed by the legislature is so small—representing a 45 per cent reduction over the present biennium—that some of our bureaus have been seriously crippled.

"Child Hygiene, in which field much of our program of prevention lies, has little left—a bureau chief, a stenographer, a part-time public health nurse.

"The field worker in the Bureau of Tuberculosis has been removed. Previously, our motor clinic and its personnel had to be discontinued. This entire bureau now consists of two persons—the chief and a clerk.

"All of the work that lies ahead of us, not only for the prevention of tuberculosis, particularly in children, but for the prevention and control of other communicable diseases, and for public health work in general, is in jeopardy. Public health in California, I am afraid, will run to a low ebb unless the legislature, in the July session, restores some of our funds."

* * *

Attention is called to the above, so that the physicians of California may better understand the new regulations which, under these conditions, must come into operation.

The State Board of Health suggested to the legislature that if the state tuberculosis subsidy to counties ($3 per week per patient in county sanatoria measuring up to proper state standards) was reduced to a $2 basis, the saving to the state treasury would have amounted to something like $162,000 per year; and that if the sum so saved could have been allocated to the State Board of Health, none of the essential bureaus or activities of the State Board of Health would have been jeopardized.

It is unfortunate that the budget revision committees of the legislature failed to visualize the importance of the public health work of California; and that in the effort to create a balanced budget, the blue pencil method of reduction should have been followed. It is hoped that in the postponed July session of the legislature, this budget will be reconsidered. Physicians who are interested in these public health activities should contact their local legislators during the recess, which ends on July 17, in the hope of securing a reconsideration of these matters when the legislature again convenes.

EDITORIAL COMMENT[*]

MEDIASTINAL PLEURISY

Mediastinal pleurisy is an inflammation of the pleura covering the mesial side of the lung and the lateral surface of the mediastinum. Not until there is encysted fluid between these surfaces are there definite clinical and roentgen-ray signs of the type of pleurisy we are dealing with. While it is not a frequent lesion, it is probably more often overlooked or incorrectly diagnosed than any other pleural condition. Mediastinal pleurisy was diagnosed by Laennec, Andral, and others long before the discovery of the roentgen ray. The roentgen examination remains, however, the best diagnostic procedure. An excellent résumé of the early history and review of the first reported cases of mediastinal pleurisy is that of Anders Frick.[1]

---

[*] This department of CALIFORNIA AND WESTERN MEDICINE presents editorial comment by contributing members on items of medical progress, science and practice, and on topics from recent medical books or journals. An invitation is extended to all members of the California and Nevada Medical Associations to submit brief editorial discussions suitable for publication in this department. No presentation should be over five hundred words in length.

The dry and serofibrinous types of mediastinal pleurisy as a rule are tuberculous in origin and often heal spontaneously without any serious results. Rupture into a bronchus or other important organ of the chest usually results fatally unless the invading organism is the pneumococcus. This latter type of infection gives a vomica thin in consistence and does not have a foul odor. Rupture usually takes place within twenty days after onset of the infection; therefore early diagnosis is important.

Because the pleural effusion is adjacent to the important mediastinal organs, the clinical signs differ radically. A good description of the clinical syndrome is given by Dieulafoy. He states: "Mediastinal pleurisy starts as an acute febrile attack with pain, fever, cough, and dyspnea. The symptoms caused by pressure on the mediastinum are dyspnea, stridor, sucking in of chest wall, dysphagia, distention of the veins of the chest, fits of coughing and suffocation, hoarseness, dysphonia, and spasm of the glottis. All, or only some, of the symptoms may be present, due to whether the pressure is on the trachea, esophagus, azygos vein, the pneumogastric or recurrent laryngeal nerve." The clinical sign of dullness, usually posterior, appears about the tenth day. When there are changes in the voice a bronchoscopic examination is also advisable.

The classification of types of mediastinal pleurisy is usually that based on the location of the effusion in relation to the pulmonary ligament, such as anterior and posterior, right and left. The posterior type appears to be the most common. The left, anterior type, is more frequently fatal than the other types.

The roentgen technique consists of a careful fluoroscopic examination of the chest in all positions, and of films made in those positions best suited to show the pathology in each particular case. Overexposed films are often useful in left-sided effusions. The injection of iodized oil or air, inflation of the stomach and the visualization of the esophagus by barium mixture are valuable diagnostic measures.

Treatment consists of locating encysted fluid by puncture, repeated if necessary, and careful surgical drainage so that the general pleural cavity is not infected.

In any obscure chest condition of sudden onset, with pain and nonproductive cough and with little or no increase in temperature, pulse rate, or leukocyte count, the possibility of mediastinal pleurisy should be kept in mind. No doubt many cases of mediastinal pleurisy have been overlooked in the past.

1501 South Figueroa Street.

HENRY SNURE,
Los Angeles.

---

[1] Frick, A.: The Different Forms of Mediastinal Pleurisy with Report of Three Cases, Jour. Am. Med. Assn., 55:2042-2048, 1910.

HISTOLOGICAL SPECIFICITY

VI†

The human body is an organized colony of widely different immunochemical characteristics. Each tissue is an unique mixture of numerous ancestral, mammalian, amphibian and subamphibian proteins, lipoids and carbohydrates, thinly veneered with human-anthrapoid serum specificities. Following conjugation of the ovum and the spermatozoan there is a phylogenetic recapitulation of ancestral evolutionary biochemical history, which recapitulation is not fully complete during intrauterine life.

While the above statements grossly overemphasize the few imperfectly known facts of human tissue specificity, they do outline the generally accepted working hypothesis in current bacteriological and immunological research.

The earlier immunologists, of course, did conceive the possibility of immunochemical differences between the blood and fixed tissues of the same individual. They, however, were unable to demonstrate their postulated humoral-cellular specificity differentials. They concluded that, for all practical purposes, such differences, if they do exist, are negligible factors in specific immunity. Current methods of specific diagnosis and specific therapy, therefore, consistently ignore all reference to possible organ-specific immunochemical factors.

Data contrary to the conventional unitarian concept of tissue specificity began to accumulate as soon as the newer fractionation techniques were applied to animal tissues. The isolated proteins of the crystalline lens were soon found to be widely different from the serum proteins. All thyroglobulins were found to be of approximately the same specificity in different mammalian species. The lipoid-free kidney proteins were demonstrated to be organ-specific and not species-specific. Protein fractions that can be figuratively described as species-specific, genus-specific, and phylum-specific were demonstrated in the blood stream.

Equally convincing data were obtained from studies of the alcohol-extractable tissue lipoids. The brain-lipoids, for example, are now recognized as being immunochemically identical in such widely different species as man, sheep, rat, and frog.[1] The kidney lipoids are also apparently organ-specific. The liver lipoids combine organ-specific and species-specific properties. In the latest addition to such data, it is claimed that there are pylorus-specific, duodenum-specific, and rectum-specific lipoids in the corresponding parts of the gastro-intestinal mucosa.[2]

---

† Part I of this series was printed in the February CALIFORNIA AND WESTERN MEDICINE, page 116; Part II in March, page 188; Part III in April, page 275; Part IV in May, page 380; Part V in June, page 447.

[1] Lewis, J. H.: Jour. Immunol., 24:193 (March), 1933.

Immunochemical embryology has yielded equally startling data. The embryonic lens proteins, for example, are allegedly species-specific and not organ-specific as in the adult. Certain alcohol-extractable embryonic lipoids allegedly disappear at birth, only to reappear in malignant disease.[3] In certain animal species the complex physiochemical balance conventionally designated as "serum complement" is absent at birth. Serum properties simulating specific agglutinins, hemolysins, and virusidal agents appear apparently spontaneously in children and in the maturing young of many animal species.

Stanford University.

W. H. Manwaring,
Palo Alto.

COMMON SURGICAL ERRORS

These lines would call attention to the fact that most of the deformities requiring surgical correction need never have occurred. For some inexplicable reason splints are forgotten until too late. A patient having a chronic or prolonged illness becomes uninteresting; and, before his physician realizes it, has developed deformities which the simplest sort of splinting, if applied early, might have prevented.

There are certain rules which can be followed in any community by any physician.

1. Any wound heals best at rest. Splints produce rest. A small superficial skin abrasion on the flexor surface of the wrist assumed real importance when the boy's parents began to demand an explanation of failure to produce a cure after four weeks. The application of a splint produced a dry closed wound in eight days.

2. A person suffering from infantile paralysis can be rendered invaluable aid by his doctor, irrespective of that doctor's particular training or specialty, if he is watched for beginning deformity and the deformity prevented by early bracing.

3. Any acutely diseased or injured joint should be splinted. To make such an obvious statement seems ridiculous. Everyone in the medical profession knows this without being told. But the following cases, seen in the last year from the best county hospitals in California, would indicate the contrary: (*a*) sciatic nerve injury with knee flexion contractures and severe toe drop; (*b*) acute staphylococcus infection of ankle joint with 70 degrees equinus deformity; (*c*) adduction flexion deformity of a hip which became ankylosed after open reduction for traumatic dislocation; (*d*) flexion and wrist drop after burns to palm; (*e*) a simple impacted fracture of the femoral condyles with knee flexion contracture. These cases were in the hands of good men. These deformities need never have occurred. All of them required surgical intervention.

4. Any joint so diseased or injured as to threaten a loss of motion should be splinted in the optimum position for use of a stiff joint and held there in the intervals of treatment, that is, 70 degrees abduction of the shoulder; 90 degrees flexion of the elbow; 40 degrees cock-up of the wrist; hand in position to grasp a large ball (never flat); hip 10 degrees flexion, with abduction according to existing or anticipated shortening; knee 5 degrees flexion; foot 5 degrees below a right angle to allow for wearing a heel. It is common practice to place an injured hand on a flat board splint. This position is the one in which the thumb is absolutely useless. The thumb must not be at the side, but in front of the palm to be used.

5. In cases of nerve injury any physician may institute good treatment by use of the simple rule that splinting should reverse the tendency to deformity. For example, a cock-up position for wrist drop, extension of the knee in paralysis of the quadriceps femoris, etc.

6. Splinting can do harm, but that harm is never from the rest or fixation. Damage from any dressing must be due to one of four things—undue pressure on the skin, compression of a superficial nerve, obstruction to normal circulation, or bad position. If the limb is not more comfortable after application of a fixation dressing, if the patient complains of discomfort in a brace, splint or cast, *listen to him!* When he states his foot goes to sleep in a cast get an accurate description of what part of the foot. Often it will be found that he really means the fifth toe and a small area just back of the first digital interspace on the dorsum of the foot. Such findings indicate pressure on the common peroneal nerve at the head of the fibula. Similarly in other faulty dressings, careful attention to the patient's complaints will disclose real errors in the application of the apparatus more often than not. Never fail to heed your patient if he is wearing a rigid dressing of any kind; bad disposition is the last diagnosis to use in explaining the discomfort of such a dressing.

To generalize, it is safer to splint an injured or diseased extremity than not. The common fear of losing joint motion is not justified. Rest hastens healing, and rapid healing ultimately conserves motion. Mechanical support relieves pain and muscle spasm; the patient will be more comfortable, and his physician will have less trouble. And finally the fact that a splint was applied is a remarkable proof, in case of legal controversy, that the physician anticipated and attempted to avoid a bad result. In short, splint everything that can be splinted and the percentage of error will decrease.

Orthopaedic Hospital.
2417 South Hope Street.

Harold E. Crowe,
Los Angeles.

---

[2] Witebsky, E., and Zeissig, A.: Zeitschrff. f. Immunitätsforsch., 76:266, 1932.

[3] Hirszfeld, L., Halber, W., and Rosenblat, J.: *Ibid.* 75:209, 1932.

C. M. A. DEPARTMENT OF PUBLIC RELATIONS

An open forum for progress notes on the department's activities, and for brief discussions on medical economics. Correspondence and suggestions invited. Address Walter M. Dickie, Room 2039, Four Fifty Sutter Street, San Francisco. This column is conducted by the Director of the Department.

The Position of the State and County Medical Societies*

Alson R. Kilgore, M. D. (San Francisco).—Let us be frank. The medical profession, if it had its way, would not choose any scheme of health insurance. We value very much the fine relationship of private patient to private physician, a relationship in which the physician feels his entire responsibility to his patient alone. It is fair to state that the interests of patients and physicians are identical in this matter. Certainly it is of advantage to the patient that the physician's entire responsibility be directed toward him.

But we realize in the medical profession that the financial problem of serious illness is very real and urgent. We are willing to sacrifice some of our preferences to meet a real community need. For two years we have studied this problem in San Francisco. In general, the conclusions of the Section of the San Francisco County Medical Society parallel closely the conclusions of the Public Health Section of the Commonwealth Club.

Increase in Illness Costs Has Raised Problem.—We have become convinced that the cost of good medical service—not only physicians' service but all that goes with it—has increased materially and is likely to increase further. Our ideas have been confirmed by the report of the Committee on the Costs of Medical Care. The cost of hospital and nursing services and constantly increasing laboratory work have been added to what the doctor formerly got. To my mind, this increase in total cost of sickness has raised the whole problem. Today when good medical service means not only the doctor's service but all the other things we have developed, the cost has become too great for the individual of moderate means to stand.

We are going to see those costs increase as medical knowledge and facilities develop. Fifteen years ago, for example, we knew little about the treatment of cancer by x-ray and radium. Today we have not given an advanced cancer patient what he is entitled to unless he has had these expensive forms of treatment. Within the last two years we have seen the development of apparatus which will produce not the present 200,000 volts but a million volts. We do not know yet how valuable this will be, but if it is sufficiently more useful, all over this country an enormous investment in x-ray apparatus must be scrapped and an additional investment made in the newer device.

Question Is One of Spreading Costs.—This is only one example. We cannot reduce the cost of medical service without reducing its efficiency. The problem, therefore, is not to reduce the cost but to spread the cost over groups of individuals and over periods of time so that the individual who is caught with an uncommon and expensive illness will not be financially handicapped by it.

I said that our Section's conclusions closely paralleled those of the Public Health Section of the Commonwealth Club. We disagree, however, on certain points. We would hardly classify radiotherapy, x-ray diagnosis, and laboratory procedures as "ancillary services." An x-ray film, for example, is only the means by which an expert in radiology arrives at his conclusions about a patient. We are securing, when we have an x-ray taken of our patient, not a photograph but the opinion of an expert in his field about the patient. We are asking very definitely for a consultation. We cannot escape the logical conclusion that x-ray examinations and, in the same manner, laboratory examinations should be regarded as professional services primarily, and not as ancillary services.

Why Not Apply Insurance to Ancillary Services Also? Following this idea further, it seems to me that the Section's conclusions have come to a certain inconsistency. The recommendation is made that the ancillary forms of medical service—radiological and laboratory tests—should be performed by the government, either city, county, or state. If we are adopting a plan of health insurance which will cover medical service in all its forms, why should we appeal to the state or local government to handle one comparatively small aspect of the whole service? If an insurance plan is to distribute the cost of all medical service, why not let it distribute the cost of the ancillary forms of medical service as well?

Recognizing that there are two distinct branches, however—the services of physicians, and the services of hospitals, nurses, and other nonprofessional elements—the medical societies are frankly divided as to whether a community health service plan should include both at the moment. We are unanimous that a plan of some sort should be undertaken in an attempt to solve the economic problem, but we are divided as to whether that plan should begin with complete hospitalization and medical service, or whether it should undertake hospitalization first.

Limiting the insurance to hospitalization expenses would be simpler in many ways, and its success more easily attained. Some of us believe the first plan should include hospitalization only, and that, with the experience and cost data gained therefrom, a plan for professional medical services could be added at a later time.

* * *

The Middle Class and Medical Costs

Ray Lyman Wilbur, M. D. (Stanford University).—By middle class I assume you mean those people between the indigent and the affluent, and that is where most of us belong. What we are really discussing is the problem of taking care of everybody except the totally indigent.

There has been some diversity of opinion expressed tonight. Doctor Torrey favored voluntary health insurance, with limited governmental activity in extending laboratory and x-ray services. Doctor Yoell goes the whole way in health insurance, but wants the government kept out of it, and piously hopes that by covering everybody the plan can be made solvent and operated largely through the medical profession. Doctor Kilgore opposes governmental operation of laboratory services.

But with all this diversity, throughout there is the tone of something to be done, of collective planning, and of retaining, if possible, the old idea of a family physician.

Ancillary Services Greater Financially than Physician. It is true that the position of the family physician has changed, largely through the development of these "ancillary services." They have become larger financially than the doctor. They are important and expensive. And they have given us a great existing plant.

---

* Excerpts from a presentation of opinions on medical service and health insurance plans, given under the auspices of the Commonwealth Club of California. Lack of space permits only a partial symposium.—W. D., Department of Public Relations.

We have this existing plant in San Francisco: hospitals, public and private—some endowed, others operated by religious orders. They have great buildings, well-trained staffs; everything is in operation. We do not have to start back at the base line.

For the moment these hospitals are in difficulty. Increased occupancy has sent the public hospitals scurrying for more tax money. The opposite, low occupancy and insufficient funds from private patients, has actuated the private hospitals to search for some plan to meet their financial difficulties.

The doctor is caught in between. He has become a barnacle on the ship of which he used to be captain; and the question is whether he can attain the pilot's cabin again. Without the trained brain of the doctor, the hospital amounts to nothing, it is a place of death; without his trained brain, the x-ray laboratory means nothing. It is the doctor's trained brain that is of significance. It is to set it free with the sick, to push the economic obstacle off the road, that we are met to discuss tonight.

Repeated Small Payments to Meet Emergency Is Essence. Changes are taking place. I heard of an obstetrician the other day who found it difficult to pay his office rent. Just as many babies were coming into the world with his help, but fewer checks were coming to him. He devised the plan of having each prospective mother bring with her each month one-ninth of the amount it would cost to pay the hospital and the doctor's bill. The doctor is now paying his office rent and going ahead.

Here is the essence of the problem: repeated small payments, over a period of time, to meet an emergency that may or may not come, those payments distributed to the trained brains that will do the job, without middle men, on a basis that will see that the doctor is adequately cared for and the patient given the kind of care he needs. That is not beyond the possibilities.

One of our difficulties is that we are inclined to be perfectionists. In this problem we cannot get everything done at once. But by building around existing plans, we can create islands in the community that will soon spread over most of it.

Try Voluntary System Before Crystallizing Procedure Into Law.—We will have to bring in the idea of group practice, for that is about all the hospital and its staff means. Group practice is a great time saver for the patient and the doctor. For the hospital it is the easiest way to meet hospital problems. It affords the doctor an opportunity for the recreation and further education he vitally needs. It removes the bonds of slavery many private physicians wear. It divides the expense. Moreover, a group system can readily be gathered together around a hospital.

With the help of the county medical society, the hospitals, the hospital council, and the Community Chest San Francisco can begin to solve this problem.

While I sympathize with Doctor Yoell's purpose, I believe that as much should be done as possible without bringing in the legislator. What he does is crystallized into law. Eventually that may be necessary. Meanwhile there is so much opportunity for the physician working with voluntary organizations that my hope is that we will go ahead, building around our health centers, on a trial basis, and have that experience behind us before we think of asking the legislature for definite procedures. We can afford to take a little time. We have taken a great deal of time up to date.

* * *

What Is an X-Ray Examination?

E. H. Skinner, M. D. (Colorado).—The x-ray machine of today, with its multitude of refinements, provides a definite answer to many special clinical questions and affords a comfortable corroboration of most clinical observations. The x-ray examination has progressed until the radiologist is no longer satisfied to report upon suspicious shadows; it is no longer a simple photographic technique; it is not merely the taking of films, followed by the dictated report. The x-ray examination is a systematic, painstaking procedure which uses every possibility of shadow value, properly correlated with the clinical history and social career of the patient. The x-ray examination is really a clinical examination with method, mechanics, and manifest artistry.

CANCER COMMISSION*

Report of Chest Tumors Committee

Introduction.—In pulmonary malignancy the neoplasm is, as a rule, symptomatically silent; signs present are due either to the inflammation brought on by interference of the new growth with bronchial drainage or by atelectasis from blocking of a bronchus or by invasion of other structures such as the ribs or esophagus by the neoplasm. Far too often malignancy is not considered until late in the patient's illness. Pulmonary inflammation or tracheobronchial irritation unusually prolonged should lead to the consideration of bronchial or pulmonary malignancy. When a "pneumonia" slips into the class that is so often termed "unresolved," the possibility of underlying malignancy must be considered. Tracheitis, bronchitis, bronchopneumonia, massive lobar involvement, atelectasis or pulmonary abscess are frequent accompaniments of intrapulmonary neoplasms.

Any condition showing signs of pulmonary inflammation which might be diagnosed as one of the above might also be diagnosed as tuberculosis. Therefore, confusion may arise in the diagnosis between tuberculosis and cancer, and as a matter of fact carcinoma of the lung probably not uncommonly is preceded by pulmonary tuberculosis.

Notwithstanding the probability that improved methods in diagnosis are in some measure responsible for the definite increase in the number of recorded cases of intrapulmonary carcinoma, yet the fact remains that pulmonary malignancy has alarmingly increased within the last five years. It is also true that measures to combat its growth and to eradicate it are becoming more effective. Recent advances in thoracic surgery have made surgical exploration a relatively simple procedure, so that easier diagnosis can be made. Also, more effective radiation technique makes it a valuable adjunct to treatment. It is of great importance, therefore, that in a patient with intrathoracic complaints not readily accounted for, malignancy should be early and seriously considered.

SYMPTOMATOLOGY

1. Carcinoma of the lung is suggested by the following episodes:

(*a*) An irritating nonproductive cough, with or without occasional blood-streaked sputum of several weeks' duration, may be the only complaint.

(*b*) An acute illness, presumably influenza, bronchitis or pneumonia persisting abnormally long, suggests pulmonary carcinoma.

(*c*) Gradual loss of weight and strength over a considerable period of time without any pulmonary signs whatever warrants an x-ray of the chest for the possibility of intrathoracic carcinoma.

(*d*) Frequently recurring bloody, or clear, pleural effusion without evidence of heart disease may be due to peripheral pulmonary carcinoma.

The most common symptom of primary carcinoma of the lung is a cough which is approximately twice as frequent as hemoptysis. Other symptoms and signs are pain, fever, dyspnea, cyanosis, effusion, loss of weight, atelectasis, bronchial stenosis and stridor, clubbing of fingers and cavitation.

---

* The Cancer Commission was brought into being by the House of Delegates of the California Medical Association to aid in the furtherance of all efforts to combat cancer. The roster of officers and the central office of the Commission to which communications may be sent is printed in this issue of California and Western Medicine (see front cover directory). This column is conducted by the Secretaries of the Commission.

As suggested before, these symptoms and signs are also those of inflammation and may be associated with any intrathoracic inflammatory process. It is again stressed that carcinoma of the lung may be associated with any other intrapulmonary inflammatory process.

2. Mediastinal malignancy presents signs and symptoms of pressure on mediastinal structures, frequently on the recurrent laryngeal nerve, giving laryngeal paralysis. Signs and symptoms therefore are irritative cough, hoarseness (progressive or recurring), dyspnea, dysphagia, substernal pain, cyanosis and enlarged venous channels, and stridor.

3. Pleural endothelioma is of very rare occurrence. Its presence is suggested by pleural effusion, which is usually bloody, and pain along the course of the intracostal nerves.

DIAGNOSIS

It must always be kept in mind that the signs and symptoms of both intrathoracic tuberculosis and syphilis may be suggestive of intrathoracic tumors. They must, as a routine, therefore, be considered.

The possibility of a lesion in the chest being secondary to a silent primary growth somewhere else in the body must be considered. One must make a thorough physical examination, keeping in mind, especially, the kidney, prostate, testicle, breast, and stomach.

Immediate consultation between the physician, thoracic surgeon, and radiologist is important, both as to arriving at a dependable diagnosis and outlining a definite plan of treatment.

1. *Carcinoma of the Lung.*

(*a*) Carcinoma must be differentiated from benign tumors. The most common benign tumors are cysts, such as echinococcus, dermoid or congenital. Other rare benign tumors are lipoma, fibroma, and especially chondroma.

(*b*) An x-ray is indispensable and valuable information may be obtained from it. A diagnostic artificial pneumothorax often gives valuable information in differentiating a lesion noted by x-ray.

(*c*) The sputum should be carefully examined for tumor tissue. The patient should be instructed to save any unusual substance in the sputum.

(*d*) Bronchoscopy, usually followed by an opaque medium injection (lipiodol), is indicated if x-ray alone is inconclusive. Bronchoscopy may not only eliminate bronchogenic carcinoma but foreign body as well and may produce better drainage of an inflammatory area.

(*e*) Exploratory thoracotomy is justifiable and indicated where other measures fail to complete the diagnosis.

2. *Mediastinal Malignancy.*

The radiologist should study the mediastinum by means of the fluoroscope and with films at various angles and with barium in the esophagus.

Tumors to be considered are: dermoid and echinococcus cysts; benign tumors, such as fibroleiomyoma, xanthoma, chondroma, lipoma, fibroma, ganglioneuroma, enlarged or persistent thymus, intrathoracic thyroid, aneurysm.

Malignant tumors to be considered are lymphosarcoma, Hodgkin's disease, thymoma, carcinoma of the esophagus, teratoma, intrathoracic thyroid of the malignant type.

Enlarged lymph nodes in various parts of the body may be found and biopsy may establish the diagnosis.

X-ray therapy is a very valuable means of diagnosis, lymphosarcoma responding very rapidly to such therapy and, to a lesser extent, Hodgkin's disease. The latter is variable in its response.

3. *Pleural Malignancy.*

Consideration should be made of benign cysts and tumors, tuberculosis (the tuberculin test may be of value), cardiac disease; and roentgenograms should be taken.

Aspirated pleural fluid may be concentrated by standing or centrifugalization and examined for tumor cells.

TREATMENT

Medical.—As yet medical treatment has nothing whatever to offer the patient except temporary relief of symptoms.

Surgical.—Lobectomy for carcinoma early diagnosed while the growth still is deeply situated within the lobe itself has met with very considerable success. Sufficient time, however, has not elapsed since the lobectomies were reported to give definite conclusions regarding the range of possibilities. Benign tumors may, of course, be similarly removed.

Roentgenological.—In practically every type of intrathoracic malignancy, hope for prolongation of life depends upon properly conducted radiation therapy. While cures are rare, inoperable cases should have the benefit of a judiciously applied x-ray and/or radium therapy.

SUMMARY

1. The possibility of malignancy should be considered early in any case where signs of intrathoracic inflammation persist.

2. Early consultation should be had between the attending physician, radiologist and thoracic surgeon, in order to arrive at an early diagnosis and to establish a definite plan of treatment.

Respectfully submitted,

C. M. A. CANCER COMMISSION COMMITTEE
ON CHEST TUMORS.

Frank S. Dolley,
Chairman
A. Lincoln Brown,
Secretary
Philip King Brown
Harold Brunn
Chesley Bush
Leo Eleosser
Sumner Everingham
Milton J. Geyman
Scott D. Gleeten

Roy W. Hammack
Samuel J. Mattison
Robert A. Peers
Philip H. Pierson
F. M. Pottenger
Dexter N. Richards
H. E. Ruggles
Sidney J. Shipman
William H. Thearle
H. G. Trimble

The results of experiments on rats support clinical experience that anemic patients do not respond well to irradiation, and that tumors with a poor blood supply react badly to irradiation. It follows that before treatment with irradiation every endeavor should be made to bring the patient's blood to as near normal as possible, and that any anemia produced by irradiation should be vigorously treated during the intervals between irradiations, and the blood condition brought back to normal before further treatment is given.—Abstracted in *American Journal of Cancer,* Vol. 16, p. 760, 1932, from Mottram and Eidinow, "On Rats."

The Treatment of Cancer by Antiserum.—It has been found that mice suffering from spontaneous (naturally acquired)tumors can be cured by the injection into the tumor of a suitable amount of euglobulin, a serum protein. In the course of an extensive experiment 74 per cent of mice with spontaneous cancers who received this antiserum were cured, whereas all the control mice (which received inoculations of normal serum) died of cancer. It was found that, as a result of the treatment, 90 per cent of the cured mice were resistant to reinoculation with portions of the same tumor.

The hope naturally arises that it may be possible to attain an equal degree of success in the treatment of human cancer with euglobulin. There is, however, as yet, no certainty that this will be so. In any event many difficulties and disappointments are sure to be met with when the treatment of human cancer begins.—Ninth Annual Report, British Empire Cancer Campaign, 1932.

STATE MEDICAL ASSOCIATIONS

This department contains official notices, reports of county society proceedings and other information having to do with the state associations and their component county societies. The copy for the department is edited by the state association secretaries, to whom communications for this department should be sent. Rosters of state association officers and committees and of component county societies and affiliated organizations, are printed in the directories noted under Miscellany, on the front cover index.

CALIFORNIA MEDICAL ASSOCIATION

GEORGE G. REINLE	President
CLARENCE G. TOLAND	President-Elect
EMMA W. POPE	Secretary-Treasurer

OFFICIAL NOTICE

Notice of Discontinuance of Clinical and Research Prizes for 1934.—On recommendation of the Committee on Survey of Expenditures of the Association, the House of Delegates voted in favor of discontinuance of the Clinical and Research Prizes awards for the present year.

COMPONENT COUNTY MEDICAL SOCIETIES

ORANGE COUNTY

The June 6 meeting of the Orange County Medical Association was held in the usual meeting place, the Orange County Hospital.

Doctor Newkirk reported that members of the Reconstruction Finance Corporation were not entitled to county care, the State Compensation Committee reporting that the county is liable and should carry insurance. Doctor Zaiser reported that the matter was being taken up with the Board of Supervisors. Doctor Wallace stated that the insurance plan had the backing of the Association, and referred the matter to the Public Relations Committee.

The guest speaker of the evening was Dr. Edward Huntington Williams of Los Angeles. He gave a very entertaining and instructive talk. Many of the pitfalls laid for a doctor on cross-examination were pointed out and a number of ways to avoid these traps were given. Some of the medico-legal aspects of the Judd, Hickman, and other cases were also given.

After discussion a rising vote of thanks was given to Doctor Williams. Waldo S. Wehrly, *Secretary.*

SAN JOAQUIN COUNTY

The stated meeting of the San Joaquin County Medical Society was called to order by President J. F. Doughty at 8:15 p. m., Thursday, May 4, in the Medico-Dental clubrooms, 242 North Sutter Street, Stockton.

Dr. Nathan Hale of Sacramento spoke on the subject *Prostatism.* He handled the topic in a masterly way, covering the historical background and the present-day methods of operation and treatment. He laid particular stress on the Caulk cautery punch operation, stating that the operation is not without danger. It is not simple nor is it complicated. There is no difference in the preliminary preparation of any patient for prostatism. Postoperative dangers are the same lurking, vicious ones one encounters in the open operative methods. Hospital days are shortened. Immediate end-results are often brilliant.

The paper was discussed by Doctors Fitzgerald, Hudson Smythe, and Doughty.

Very interesting and complete reports of the state convention at Del Monte were given by Doctors George Sanderson and Dewey Powell, delegates.

Doctor Powell mentioned especially the prize and honorable mention received by one of our members, Dr. Sam Hanson, for an original paper.

Doctor Bolinger of Lodi called attention to some of the publicity being given over the radio by physicians on the subject of the cost of medical care. After some discussion it was moved by Dr. Dewey Powell that the secretary call the attention of the state secretary to the matter, inviting censorship of such talks before broadcasting. This was seconded and passed. C. A. Broaddus, *Secretary.*

SANTA BARBARA COUNTY

The regular meeting of the Santa Barbara County Medical Society was held in the Bissell Auditorium on Monday, June 12, at 8 p. m., with President M. J. Geyman presiding.

The speaker of the evening was Dr. Verne Hunt of Los Angeles, who gave an extremely interesting and instructive talk on *Surgery of the Colon.* This was followed by discussions and questions by Doctors Wills, Pierce, Wilcox, Ullmann, and Geyman.

The society then went into executive session.

A resolution, signed by the Santa Maria members, requesting the formation of a branch of the Santa Barbara County Medical Society at Santa Maria, was read. Upon discussion it was moved, seconded and carried, that this matter be referred to the board of censors, and if the board of censors reported favorably upon the legality of such branch formation, this reading of the resolution was to be considered as the first reading for an amendment of the by-laws.

A resolution, passed by the Radiologic Section of the California Medical Association, was read and ordered filed. Dr. Arthur E. Serns presented his resignation to the Santa Barbara County Medical Society, which was unanimously accepted. The application of Dr. Horace Coshow was read and, upon balloting, he was unanimously accepted into the society. Doctor Henderson, for the Public Relations Committee, reported progress in the establishment of the downtown dispensary. Doctor Freidell reported for the investigating committee of the Santa Maria Hospital.

It was moved, seconded and carried, that the society take a two months' vacation, the next meeting to be held in September. William H. Eaton, *Secretary.*

SANTA CLARA COUNTY

The Santa Clara County Medical Society met on June 21 at the Palo Alto Hospital.

The following officers were elected for the ensuing year: President, George Barry; first vice-president, C. Kelly Canelo; second vice-president, Russell V. Lee; third vice-president, Ronald H. Prien; secretary, E. O. G. Schmitt; assistant secretary, Donald R. Threlfall; treasurer, Harry Hoag; councilors-at-large, James B. Bullitt, L. M. Rose, and Helen Lee.

The Santa Clara County Medical Society has at the present time a membership of 172.

E. O. G. Schmitt, *Secretary.*

SONOMA COUNTY

The June meeting of the Sonoma County Medical Society was held at the above written place and date at the hour of 6:40 p. m., President Mark L. Lewis presiding.

The applications for membership, in regular form and fully recommended, of Doctors Herbert C. Honor, Vera O. Honor of Cotati, and Henry S. Gossage of Petaluma were received and ordered to take their regular course.

The president welcomed the visiting guests in a few appropriate and well-chosen words. Dr. John W. Shuman of Los Angeles gave a very instructive as well as an interesting dissertation upon the subject *Early Signs of Heart Failure.* Doctor Shuman's keen powers of observation and wide experience in this field permitted him to handle the subject in an able and pleasing manner. His remarks were well received, and an animated discussion followed from which many interesting facts and points in the diagnosis and treatment of heart condition were brought out.

Preceding the business and scientific program a golf game was enjoyed by a goodly number of the members. There being no further business the meeting adjourned, to meet again in September.

W. C. Shipley, *Secretary.*

✣

TULARE COUNTY

The final spring meeting of the Tulare County Medical Society was held in Visalia on May 20. A dinner at Motley's Café preceded the program. Those in attendance were: Doctors Barber, Newton Miller, Anne Bond, E. C. Bond, Fowler, Weiss, Kohn, Beck, Hicks, Betts, Fillmore, Rosson, Parkinson, Mitchell, Miller, and Preston. Several members brought guests to the meeting.

At this time it was reported that the total paid membership for 1933 remain at forty-one, there being but three delinquencies.

Doctor Betts briefly sketched the plans of the Public Relations Committee and promised a full report at a later date.

The progress made by the Cancer Commission in the study of cancer was touched on by Doctor Woolsey prior to the paper of the evening.

Embryology of the Neck, with Its Clinical Application was the subject of Dr. J. Homer Woolsey's paper. He discussed cysts, and tumors of the neck from the standpoints of location, recognition, and treatment, together with knowledge recently obtained from the study of human embryos. Illustrative lantern slides emphasized the points brought out and clarified our clinical ideas with regard to this subject. At the conclusion of the presentation the members were given a chart of the subject-matter, which will be of value in differentiating these clinical conditions.

A rising vote of appreciation was tendered Doctor Woolsey for his kindness in coming to the meeting to present this excellent paper.

The meeting was then adjourned for informal discussion.

Karl F. Weiss, *Secretary.*

CHANGES IN MEMBERSHIP

New Members (27)

Alameda County.—Stanley Samuel Fischer, William Otto Solomon, Arthur Clarkson Smith.

Imperial County.—Merritt C. Canfield, John D. Keye.

Los Angeles County.

Lucius W. Case
William M. Christensen
Charles Rugus Coate
James Bird Cutter
C. F. Freytag
Calvin Zeno Holt
Frank Hugh Lane
Bernard Bruce Newbarr
Frederick David Newbarr
Pearl Marie Sampson
Samuel Soghor
Marcus Othello Tucker
Wesley John Woolston

Mendocino County.—Arthur C. Huntley.

Riverside County.—Elmer Bingham.

San Diego County.—Walter Lowrie Grow, Roy H. Palmateer.

San Joaquin County.—Frank Alexander McGuire.

San Luis Obispo County.—Raymond Joseph Smyth.

Santa Barbara County.—Albert S. Missall.

Santa Clara County.— Salvadore Vincent Campisi, Arthur T. McGinty.

Transferred (2)

Harrison M. Hawkins, from Kern to Los Angeles County.

Dudley A. Smith, from Alameda to San Francisco County.

In Memoriam

Breitstein, Louis Isidor. Died in Virginia City, Nevada, May 19, 1933, age 54 years. Graduate of the University of California Medical School, San Francisco, 1903. Licensed in California, 1903. Doctor Breitstein was a member of the San Francisco County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

✠

Hulbert, George G. Died in San Diego, June 1, 1933, age 82 years. Graduate of College of Physicians and Surgeons, Keokuk, Iowa, 1880. Licensed in California, 1888. Doctor Hulbert was a member of the San Diego County Medical Society, a retired member of the California Medical Association, and the American Medical Association.

✠

Roncovieri, Alfred. Died in San Francisco, May 16, 1933, age 46 years. Graduate of the University of Pennsylvania School of Medicine, Philadelphia, 1911. Licensed in California, 1911. Doctor Roncovieri was a member of the San Francisco County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

✠

Sherwood, Oscar William. Died in Fort Bragg, May 14, 1933, age 71 years. Graduate of the University of Illinois College of Medicine, Chicago, 1885. Licensed in California, 1889. Doctor Sherwood was a member of the Mendocino County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

THE WOMAN'S AUXILIARY TO THE CALIFORNIA MEDICAL ASSOCIATION[*]

Retiring President's Address to the Auxiliary

By Mrs. F. E. Coulter,
Santa Ana

Madam Chairman, Honored Guests, and Delegates:

Anyone who says that reports are dry and musty has never been the president of a pioneer auxiliary to a medical association.

It is a rare privilege to pioneer and to adjust your vision to your assets; to work with younger women who are fired with enthusiasm, and with older women whose judgment is ripe and who keep one from rocking the boat.

Last year when your president took office she stated that she believed that the major work of the State Auxiliary lay in educating and nourishing the county auxiliaries already formed, rather than in bringing into being anemic groups that might struggle for existence.

If every state officer and board member were sincerely interested in the auxiliary movement, there would be no passive organizations. One sincere, unselfish, loyal woman with vision in each auxiliary can almost solve its destiny. We have no right to handicap expansion by accepting the honors of an office and yet make little or no effort to familiarize ourselves with its history, its ideals, and possibilities. Once having become inoculated with the "Handbook" and the national news letters, we should have in a year's time an enthusiasm that should liken itself to a passion. The national could scarcely have made a greater contribution to the auxiliary movement than that of the publication of its history and growth.

---

[*] As county auxiliaries to the Woman's Auxiliary to the California Medical Association are formed, the names of their officers should be forwarded to Mrs. Thomas J. Clark, chairman of the Publicity and Publications Committee, 40 Ross Circle, Oakland. Brief reports of county auxiliary meetings will be welcomed by Mrs. Clark and must be sent to her before publication takes place in this column. For lists of state and county officers, see advertising page 6. The Council of the California Medical Association has instructed the editor to allocate one page in every issue for Woman's Auxiliary notes.

Where we were pioneers one year ago, blazing our own trails into adventurous woods, we are today an army of recruits in training, whose course is well charted. The fact that the work is definitely divided into five distinct sections, namely, social, philanthropic, legislative, educational and public relations, allows for diversified interests.

It is thrilling to have a county report, "We have had a very happy year—no brilliant achievement, but a steady growing bond of friendship and fellowship"; or, "Our county auxiliary has no apologies to make for being a frankly social organization. For the first time physicians' families in the county have met in a group and discovered that as a group they are congenial." This from a county whose stretches of unpaved roads sometimes make it necessary for the members to remain overnight in order to attend an auxiliary meeting.

Another reports an educational program so varied that it makes you long to share each program with them. Can you think of more intriguing subjects than these? "Illness in a Zoo"; "Does Your Child Think?" "Voodism in Haiti"; "Medical Aviation." If you doubt the expanding interests of this group, listen to the following paragraph: "The program committee for this year met with a committee from the county medical society and outlined a series of educational talks on medical subjects." One of our most perfectly organized groups reports that a sewing group met at a hospital and in one day completed twenty-five children's dresses for the Red Cross, and contributed $10 to a local orphanage.

It is deeply gratifying to note the high trend of all programs. The eagerness with which our members are absorbing a knowledge of what our state is doing for those dependent upon it for scientific care is reflected in their subject-matter. "Crime Prevention and How the Cost of Crime May Be Reduced"; "What We Are Doing for the Mental Defect"; "Delinquency, Its Cause and Cure"—all are engrossing subjects which lend themselves not only to self-education, but prove a liaison between the medical profession and the lay public.

One of the larger counties accomplished a magnificent piece of work in legislative matters through its Committee on Public Relations. Official letters of protest were sent to the members of the Committee on County Government of the California Legislature, to which body had been referred the County Hospital Bill No. 2190, in which we were all vitally interested.

This same county through its Health Education chairman and School Relations chairman distributed some sixteen hundred study envelopes on health matters. Outstanding in value was the work done by this group through the physicians' household budget survey. This work encompassed six counties.

Hygeia is experiencing a slow but steady growth. Many auxiliaries are placing the magazine in high schools and junior colleges, in Young Women's Christian Associations, Young Men's Christian Associations, county hospitals, Mexican schools, detention homes, and county libraries.

Though only one year old, one of the younger auxiliaries reports its membership has increased one-third, and the average attendance is three-fourths of the entire membership. They have taken as a slogan, "Educate ourself first."

Another president writes: "To familiarize ourselves with those questions that concern both the medical profession and the laity, together with a constructive program for coöperation, have been and are the main aims of our auxiliary."

If you have not caught the vision of the ever receding horizon of auxiliary activities and are prone to be discouraged, listen to this: "Our state organization is only four years old, yet one county unit has created a philanthropic loan fund; a plan to aid doctors and their families who are in distress."

Still another county has established a medical student loan fund, while another contributes a gift of money to a nurse in each of the two nursing schools. One has had published its county health laws for distribution.

This report would not be complete without recording the personal pride that we feel in our two new organizations, Riverside and Mendocino counties. Much credit is due Mrs. Clare Cushman, who worked indefatigably to organize her county, despite difficult handicaps.

In Mendocino County there was no organized medical society, and it was through the combined efforts of herself and Doctor Cushman that the medical society and auxiliary were effected. For a young organization the work being done in Riverside County can hardly be surpassed.

Does it matter that your president has traveled over two thousand miles or that she has written over one thousand letters and visited seven of the fourteen auxiliaries?

It has been a year rich in opportunities, privileges, and precious friendships. A year made happy by a task done to the best of my ability, whose memory I shall cherish.

President's Message

By Mrs. A. M. Henderson
Sacramento

Madam Chairman and Delegates:

In approaching the coming year as president of the Woman's Auxiliary to the California Medical Association, I find great satisfaction in the attitude of all board members, county presidents, and committees. Each has signified a desire to do her part, which, after all, is the great measure of value in this work. The success of the president's term of office depends on the helpful attitude of the county auxiliaries, the way their work is completed, and the attention paid by the officers to fulfilling the obligations they assume on taking office. It is with the greatest hope I view the splendid work that may be accomplished, the friendship it holds for us, the broad acquaintance, and the bringing together in closer relations of the members of the medical fraternity and their families.

If we are to be helpful to the medical fraternity we must be representative. To date, the possibilities of our organization have only been touched. We need numerical strength, more county auxiliaries, and larger membership. In order to promote a desire in our neighboring counties to join the auxiliaries, let us develop a social and harmonious attitude. Let us realize that all who are eligible to membership in the auxiliaries have common interests. On September 24 the Council of the California Medical Association directed the secretary to write each county medical association where no auxiliary exists that it might be desirable to ask the secretary or the president to appoint some woman or women to assist in the organization of an auxiliary. That is our lead; have we followed up? If not, let us do so. Let us organize the auxiliary to its limit. We should have a membership equal in numbers to the membership of the California Medical Association.

There is a type of activity to which the auxiliaries in many communities have given attention—that is the service type. I am thinking particularly of such projects as providing loan funds for worthy medical students and raising funds for old-age needs. These seem particularly commendable and should be given study in all auxiliaries. Many members of the auxiliary are also members of other organizations, such as the American Association of University Women, the Parent-Teacher Association, the Social Welfare Workers, etc. More should join similar associations, keeping alert at all times to the interests of the medical profession but at the same time mindful of the necessity of exercising tact in all such contacts. I have recently attended state conventions of several of these associations and find that matters pertaining to medical practice are discussed with interest in each group. Today the medical profession is greatly concerned with the problem of medical economics. This subject was presented to the state welfare workers in their convention recently held in Sacramento. This is indeed a complicated and difficult problem. We could well afford to give thought and consideration to its solution and owe it to all concerned to make an effort to educate ourselves in the study. Would it not be well for every auxiliary to ask members of the profession to present the different views on the subject at one or more of our regular meetings?

I am attending the national meeting in Milwaukee and shall try to bring the inspiration of that meeting back to members of the California auxiliary.

Component County Auxiliaries

Alameda County.—The regular meeting of the Alameda County Auxiliary was held on May 19 in Oakland at the Women's Athletic Club. Mrs. Charles A. Dukes, president, assisted by Mrs. D. D. Stafford and her committee of hostesses, held a delightful reception before the regular luncheon.

Mrs. William H. Sargent, chairman of the Membership Committee, brought in thirty new members this year, and most of them attended this meeting.

Mesdames Dexter N. Richards, Mrs. Lloyd E. Kindall, and Frank S. Baxter gave most interesting reports of the state medical convention held at Del Monte in May. They were all delightful, witty, informal reports of the auxiliary meetings, from different points of view but all agreeing that the convention was a most interesting, instructive meeting.

We were proud to have two of our Oakland members prize winners in the essay contest on *A Doctor's Dilemma.* Mrs. H. McKay Pier was introduced by the president as the winner of the first prize, and Mrs. Henry A. Beaudoux as the winner of the third prize.

The regular program, following luncheon, was an innovation, since it was given entirely by our own members. It was a delightful hour of music by Mesdames Hayward G. Thomas, pianist; Milton Shutes, violinist; Clarence Page, mezzo-soprano; W. A. S. McGrath and Louis Henry Dyke, accompanists.

We shall have June and July vacation and start our regular programs again in the fall.

* * *

Los Angeles County.—The May meeting was held in the Ebell Club Solarium, Los Angeles, at twelve o'clock, Mrs. A. Bennett Cooke presiding. A business meeting was held following luncheon. This instructive and interesting program was then enjoyed by the members and guests: *The Responsibility of the Community to the Adolescent Child* by Miss Eloise A. Hafford, former superintendent of the School for Delinquent Girls in New York; *Highlights of the Convention* by Mrs. Philip S. Doane; and *Current Events* by Mrs. W. O. Leach.

* * *

Sacramento County.—The members and guests of this auxiliary motored to Colfax for their May meeting, where they were entertained for luncheon at the home of Dr. and Mrs. Robert Peers. A short business meeting was held, with Mrs. Scatena presiding. Reports of the convention at Del Monte were given by Mrs. Scatena and Mrs. Henderson. The auxiliary was represented at the convention by the following delegates: Mesdames Hugo Childress, Robert Peers, P. Botts, J. Roy Jones, and J. B. Harris. After the business meeting Rev. A. C. Baines of Colfax delivered an address on "California, the Paradise of the World." After adjournment the members and guests joined in congratulating Mrs. Henderson, our newly elected state president.

NEVADA STATE MEDICAL ASSOCIATION

O. HOVENDEN, McGill	President
D. A. SMITH, Mina	President-Elect
J. N. VAN METER, Las Vegas	First Vice-President
FLEET H. HARRISON, Minden	Second Vice-President
HORACE J. BROWN	Secretary

COMPONENT COUNTY MEDICAL SOCIETIES

CLARK COUNTY

The Clark County Medical Society met on Saturday, May 13.

Doctor Balcom of Las Vegas presented the following program: *Roentgen Diagnosis of Lesions of the Small Intestine* by Dr. Kenneth Davis of Los Angeles; *Nontubercular Diseases of the Chest* by Dr. Dwight Davis of Los Angeles.

A resolution of condolence was addressed to Dr. H. V. Vander Meulen, whose wife died on April 30, following a long illness.

The society will meet on Sunday, May 21, to greet Dr. Horace J. Brown of Reno.

* * *

The Clark County Medical Society met in regular session at the White Spot Café, Tuesday, June 13.

Dr. R. O. Schofield and Dr. Jantzen of Boulder City were elected to membership.

Dr. C. W. Woodbury of Las Vegas read a paper on *The Goiter Problem.* A vigorous discussion was entered into by Doctors McDaniel, Fenlon, Herzig, and Schofield.

It was decided to hold no meetings in July and August.

J. N. Van Meter, *Secretary.*

⁂

WASHOE COUNTY

The regular meeting of the society took place at the State Building on May 11.

A membership card under date of May 2, 1933, from the Los Angeles County Medical Association was read stating that Dr. Lawrence Parsons, now of Reno, was in good standing. By unanimous vote of the society Doctor Parsons was accepted into membership of the Washoe County Medical Society.

Mr. R. D. Brisbane, superintendent of the Sutter Hospital, Sacramento, upon invitation addressed the society with reference to insurance in the Superior California Hospital Association. This insurance organization recently organized to care for a group of persons who could receive insurance to cover costs of hospitalization for a stated number of days. The organization is sponsored exclusively by the profession, assisted by dentists and nurses. Mr. Brisbane made a favorable impression. The society will inform itself upon the subject and will be prepared to come to a decision in the future.

Mr. Dewey Holmes, local representative of the Nevada Credit Association, asked permission to talk to the society with reference to getting the physicians to coöperate in securing the financial standing of patients seeking the medical or surgical services. The society took no action upon the plan, believing that it was a matter that the individual physician could concern himself with if he should so desire.

Next followed a most excellent talk by our own member, Dr. Bart Hood. This was in the form of a *Surgical Travelogue.* It was so highly interesting that the bare bones of science were covered with the living flesh of personality. Dr. and Mrs. Hood began a sightseeing and educational tour by first visiting the world's greatest dam, the Boulder Dam at Las Vegas, Nevada. From there the tour extended to Dallas, Fort Worth, and Wichita Falls. The plan there of no pay, part pay, full pay was on the same plan as is now in vogue in the Washoe County Hospital. Doctor Hood said the plan was satisfactory in Wichita Falls, but upon questioning in Dallas and Fort Worth, it had not been found satisfactory in those cities. From there the tour went to El Paso and Juarez, thence to the great medical and surgical center of the South, New Orleans. Doctor Hood was impressed with the surgical and medical facilities that the city had to offer in the combined Tulane Medical and Louisiana State Medical Colleges, but owing to an epidemic of influenza the surgical departments were closed for the time. The historic part that New Orleans has taken in the history of the United States was commented upon, and with regret the party steered their way to the famous city of the confederacy in the trying days of America's greatest war.

At Richmond Doctor Horsely showed the exquisite courtesy which characterizes the southland. His clinic was extremely profitable. Then Washington, Philadelphia, New York City, Boston, Cleveland, Detroit, Minneapolis, Rochester, Mayo Clinic home and, finally, the Cook County Hospital, with its enormous clinic, were visited with profitable results. It was Doctor Hood's belief that about as much profit came to the physician in observing the work of the different surgeons and then forming his own opinion as to the line of procedure, as might come from a postgraduate course. Certainly such professional travel contacts are bound to give incentives for usefulness to the physician as he applies his art for the benefit of his patients.

At the invitation of Doctor Hood, Doctor Parsons, pathologist, was asked to explain the new theory in vogue at many clinics at present on the "shift to the left." Doctor Parsons elaborated by drawings the branching process in cells and the significance to be heeded whether the patient was forecasting a recovery or decline. Later on Doctor Parsons will give a more detailed paper.

* * *

The regular monthly meeting of the society took place on the evening of June 13 in the State Building, Reno.

A representative gathering of the profession was present.

After reading and approval of the minutes of last meeting, the society accepted the transfer application of Dr. W. A. Shaw, formerly of Elko, from the secretary of the Elko County Medical Society. Doctor Shaw being in good standing in both county and state medical societies, his application was received by *viva voce* vote of the society. Doctor Shaw has chosen to specialize in medical and surgical diseases of children, having recently devoted two years' study to this specialty.

A communication from the County Clerk was read requesting the physicians to lower their fee from $10 to $5 during the present financial stringency. The society deferred action on same until the September meeting and instructed the secretary to so write the County Clerk. A communication from Mr. Brisbane, superintendent of the Sutter Hospital, Sacramento, was read with reference to insurance for hospitalization. This communication was referred to Dr. J. L. Robinson for answer with the suggestion that at present the society was still undecided as to what steps to take on the matter and would consider more time desirable before deciding.

The meeting was then turned over to Doctor Fuller, who had arranged a special program on medical and surgical diseases of the eye to accompany the film on *Cataract Enucleation by the Smith-Indian Method.* This film was produced by Prof. Oscar B. Nugent of the Chicago Eye, Ear, Nose, and Throat College. Doctor Nugent has added several valuable aids to the operation, notably Doctor Barraquez's of Madrid, Spain, suction apparatus for nontraumatic enucleation of cataractous lens. The film showing was preceded by a prelude on the operation, written by Doctor Nugent. The picture was very clear and seemed to show distinctly every step in the operation. The thanks of the society were extended to Doctor Nugent for his greatly appreciated professional courtesy. Doctor de Chene read an excellent paper on *Care of the Eyes in Adolescent Children.* This paper was followed by Doctor Creveling, who read a paper on *Medical Affections of the Eye.* Doctor Fuller concluded with an excellent paper on the *Commoner Surgical Injuries of the Eye.* All papers were highly instructive to the general practitioner, with the contained lesson not to tamper with another person's eyes unless you know what you are doing and are willing to assume all responsibility.

There will be no meeting during July and August.

THOMAS W. BATH, *Secretary.*

Season for Mussel Poisoning Approaches.—With the approach of the season when mussel poisonings occur, attention is called again to the simple method by which mussels may be made safer to eat. It has been determined that the addition of one-fourth ounce (one tablespoon) of bicarbonate of soda (common baking soda) to each quart of water in which the shellfish are cooked destroys 85 per cent of the poison, provided that the cooking process is continued for twenty to thirty minutes. If everyone who gathers and eats mussels were to follow this procedure, it is probable that cases of mussel poisoning would be reduced to the vanishing point. To be sure, cooking shellfish with bicarbonate of soda does not grant complete protection, but it is believed that the partial protection afforded is sufficient to prevent severe cases of illness.

The ordinary methods of preparing mussels, by steaming and baking, do not lessen the danger of poisoning. In fact, the water in which these shellfish may be cooked takes up most of the poison, and if the broth is not discarded the danger of poisoning is increased greatly. Cooking does not lessen the danger of poisoning. Furthermore, the belief that the blackening of a silver coin can be used as an indicator for the presence of the poison is a mistaken belief. Individuals who may suffer from mussel poisoning should never be treated with alcohol for the reason that the poison is most readily soluble in that product.

There were forty-two cases of mussel poisoning in California last year, and it is probable that a seasonal quarantine on these shellfish will be established again this year. The period to be covered by such quarantine would depend entirely upon the laboratory tests for toxicity.—*Weekly Bulletin, California Department of Public Health.*

Plague Under Control.—More than thirty years have passed since the first case of plague occurred in California. During those years two epidemics of bubonic plague have occurred in San Francisco and two pneumonic epidemics—one in Oakland and one in Los Angeles. Other cases have been sporadic cases of bubonic plague which has occurred from time to time in sections where rodent plague is known to exist. Fortunately for the other states, this disease has never spread from California to districts beyond the boundaries of this state, and there is no available evidence to show that the infection has been transmitted to susceptible rodents in other states. It is only through the combined efforts of city, state, and federal authorities that this highly disastrous disease has been kept within bounds. It is doubtful that any other infectious disease may be regarded with greater concern than plague—this truly pestilential disease which at one time caused grass to grow in the streets of London, which is the greatest menace to human life in many oriental countries at the present time, a disease which may be regarded as a constant threat to life and happiness in California.—*Weekly Bulletin, California Department of Public Health.*

MISCELLANY

Under this department are ordinarily grouped: News; Medical Economics; Correspondence; Twenty-five Years Ago column; Department of Public Health; California Board of Medical Examiners; and other columns as occasion may warrant. Items for the News column must be furnished by the fifteenth of the preceding month. For Book Reviews, see index on the front cover, under Miscellany.

NEWS

Coming Meetings.

California Medical Association, Riverside, California, April 30 to May 2, 1934. Emma W. Pope, M. D., Secretary, 2004 Four Fifty Sutter, San Francisco.

Nevada State Medical Association, Las Vegas, Nevada, September 29 to 30, 1933. Horace J. Brown, M. D., Secretary, Medico-Dental Building, Reno.

Western Branch of the American Urological Association, Vancouver, B. C., August 3 to 5. George W. Hartman, M. D., Secretary, 999 Sutter Street, San Francisco.

Medical Broadcasts.*

American Medical Association Health Talks.—The American Medical Association broadcasts on Monday and Wednesday from 9:45 to 9:50 a. m. (central standard time) over station WBBM (770 kilocycles, or 389.4 meters).

There is also a fifteen-minute talk, sponsored by the association, on Saturday morning from 9:45 to 10 over station WBBM.

* * *

San Francisco County Medical Society.—The San Francisco County Medical Society broadcasts every Tuesday from station KFRC, 4 to 4:15 p. m., and over station KJBS from 11:15 to 11:30 a. m.

* * *

Los Angeles County Medical Association.—The radio broadcast program for the Los Angeles County Medical Association for the month of July is as follows:

Tuesday, July 4—KFI, 10 to 10:15 a. m. and KECA, 9:30 to 9:45 a. m. Subject, Heart Diseases in Children.

Tuesday, July 11—KFI, 10 to 10:15 a. m. and KECA, 9:30 to 9:45 a. m. Subject, The Price of Worry.

Tuesday, July 18—KFI, 10 to 10:15 a. m. and KECA, 9:30 to 9:45 a. m. Subject, Insomnia.

Tuesday, July 25—KFI, 10 to 10:15 a. m. and KECA, 9:30 to 9:45 a. m. Subject, When Baby Learns to Walk.

University of California Radio Talks on Diet.—A new series of radio broadcasts on diet and health is to be given by members of the staff of the University of California Medical School, over stations KPO (San Francisco), KECA (Los Angeles), and KFSD (San Diego).

In this series of ten broadcasts, said H. Sparks, emphasis will be placed on diet in its relation to the health of persons young and old, well and sick.

Subjects to be discussed in this series will include: our vitamin needs; our mineral needs; how is diet to meet the child's prenatal growth needs?; the young infant; the runabout child; the school child; the youth; diet for the adult; diet for the sick; and preparing and serving the adequate diet.

Staff members of the University of California Medical School who will participate in these broadcasts are: Mrs. Nina Simmonds Estill, Doctors Alice Maxwell, Francis Scott Smythe, C. F. Gelston, Adelaide Brown, Amos U. Christie, S. R. Nettier, H. C. Shepardson, Miss Alice Lamb. The series was arranged by Dr. Langley Porter, dean of the Medical School.

American Congress of Radiology.—Chicago during the World's Fair will welcome the largest radiological congress ever held in the United States when the four national radiological societies will meet in joint convention. Other members of the medical profession are invited as well. The American Congress of Radiology is scheduled for September 25 to 30, inclusive, at the Palmer House. According to Dr. Henry K. Pancoast of Philadelphia, president of the congress, all physicians, physicists, biologists, and others connected with the allied sciences will be made welcome at the congress.

The four radiological societies sponsoring the congress who have eliminated their regular annual meetings for 1933 in its favor are: The American College of Radiology, the American Radium Society, the American Roentgen-Ray Society, and the Radiological Society of North America. The Chicago Roentgen Society will also participate. Members of the medical profession who wish further information should write to 2561 North Clark Street, Chicago, concerning membership in the congress, railroad and hotel rates, etc.

Proposed Radio Medical Broadcasting Law.—The following item should be of interest: "By no means the least important bit of legislation likely to emerge as a full-fledged law from the present session of the California State Legislature is a measure providing that radio broadcasting of untrue statements regarding the cure of ailments and the use of drugs would be a misdemeanor, punishable by certain penalties. The measure already has the approval of the lower house and now awaits the formal endorsement of the upper house. The proposed law is necessary to control the situation that has resulted from a badly overworked field of radio broadcasting, which has been consistently cultivated with characteristic disregard of the public interest, regardless of complaint and criticism. Every radio owner is familiar with the situation, and finds it most impossible in fact to escape the ballyhoo relative to various quack cures involving claims that insult the intelligence of the normal individual. Not that advertising of this type convinces many people, rather the effect is almost entirely lost, since the first impulse of the listener, usually obeyed, is to turn off the ballyhoo as soon as the dial can be reached. Nevertheless radio broadcasting stations continue to accept and exploit this form of advertising in order to further swell the private income at the expense of an institution which rightly should be regarded as a public utility. Newspapers of the country find considerable pride in the fact that newspaper advertising is conducted on a high plane of truth and accuracy and the part they have played in weeding out undesirable advertising. Inaccuracy in advertising is discouraged as promptly and relentlessly as in the news columns. During recent years certain regulations, both federal and state, have been created to regulate all claims relative to medicinal and narcotic products, but it is the newspaper profession itself which has led the move for such regulation in order to make their own efforts more effective. It is sincerely believed that the proposed legislation now before the legislature will have the complete endorsement of every citizen genuinely interested in eliminating the objectionable features of radio broadcasting and advertising" (Editorial, Eureka *Standard,* May 8, 1933). The *Assembly Weekly History* of Friday, May 12, 1933, reports that on May 12 the Senate refused passage, and notice of reconsideration was given by Senator Jespersen.

---

* County societies giving medical broadcasts are requested to send information as soon as arranged (giving station, day, date and hour, and subject) to CALIFORNIA AND WESTERN MEDICINE, 450 Sutter Street, San Francisco, for inclusion in this column.

American Public Health Association.—The preliminary program for the scientific sessions of the sixty-second annual meeting of the American Public Health Association follows the traditional pattern of breakfast, morning, luncheon, dinner, afternoon and evening meetings, beginning Monday morning, October 9. and continuing through Thursday, October 12.

The successful Health Education Institute, held last year for the first time, will be repeated this year, the theme of the five sessions being "The Psychology of Health Education."

Pacific Roentgen Club Organized.—Standing firmly upon the principle that radiology is the practice of medicine, the Pacific Roentgen Club was organized at a meeting of roentgenologists of California, held at the Santa Maria Inn on June 11. The meeting was attended by delegates from all sections of the state. Problems affecting radiology in its relationship with other branches of medicine and with the general field of public health were discussed at length, with the unanimous opinion that an organization should be formed to aggressively deal with those problems. Lowell S. Goin, M. D., of Los Angeles, was elected as chairman; L. H. Garland, M. D., of San Francisco, is secretary, and these two, with Henry Snure, M. D., of Los Angeles, John Lawson, M. D., of Sacramento, and Robert Stone, M. D., of the University of California, form the Executive Committee.

"There have been constant inroads upon radiology by laymen, nurses, corporations, and others not scientifically trained in this highly important branch of medical practice," said a statement issued from the meeting. "We, as radiologists, object to this for several reasons. First, from the standpoint of public health. The roentgen ray is a potentially dangerous instrument, as is the scalpel of the surgeon, the hypodermic of morphia, and the anesthetic. It is because these are in skillful and careful hands that they are of benefit to humanity—a thing equally true of the roentgen rays. The danger is not only one of physical damage to tissue (negligible in skilled hands), but the less spectacular and more commonly encountered danger resident in the absurd diagnoses by incompetent persons.

"We maintain that radiology, being as it is the diagnosis and treatment of human disease, is the practice of medicine, and as such should be solely in the hands of those licensed to practice the healing art.

"We object to the exploitation of any physician for the gain of any nonmedical concern. Under ruling of the California courts a corporation cannot engage in the practice of medicine. Nevertheless corporations do practice radiology, which we maintain to be a part of the practice of medicine.

"X-ray diagnosis is one of the greatest advances that have been achieved in the practice of medicine. Radiation therapy, combined with good surgery, offers the only chance we know of today for the cure of malignant disease. If radiology is degraded by falling into the hands of lay persons and is forced down to the state where the radiologist is merely the servant of a corporation, the high standards we have set up will fall, and not only medicine, but the general public will suffer a distinct loss.

"It is to prevent these things, and to stand firmly upon our rights as practitioners of medicine, that we have organized. We propose to take such steps as may be necessary to prevent further inroads upon radiology. We intend to maintain and improve our present standards and to have at all times the recognition due us as a learned and dignified branch of medicine. The California Medical Association has recognized this officially in Resolution No. 5 of the House of Delegates, adopted at the recent annual meeting, and printed on page 465 of the June issue of California and Western Medicine."

The organization is being rapidly perfected and a program is now being mapped out to carry through the principles upon which it is founded.

New Clinic Law.—Regulations for the supervision of more than one thousand clinics and dispensaries are being prepared by the State Board of Public Health, which is charged with enforcement of the Clinic Law, recently signed by Governor James Rolph.

With certain exceptions, it was pointed out by Dr. Giles S. Porter, Director of the State Department of Public Health, all clinics and dispensaries in the state are required by this new law to be licensed each year. The exceptions are for those operated by the federal government; those operated by employers, without profit, for the sole benefit of their own employees; and research clinics working under nonprofit foundations registered with the United States Government for tax exemption.

Written application for permits must be filed with the State Board of Public Health within ninety days from the time the law becomes effective.

The law defines a clinic and dispensary to be "a place, establishment or institution . . . furnishing at such place . . . without charge or for part pay or full pay, advice, diagnosis, treatment, medicines, drugs, appliances or apparatus to any person or persons not residing or confined in any such place . . . and afflicted with bodily and/or mental diseases or injuries. . . ."

Five classes of clinics and dispensaries are listed in the law: charitable, teaching and research, employer's, private pay, and governmental. Further information may be had by applying to the California State Board of Health, State Building, at Sacramento, San Francisco, or Los Angeles.

New Laboratory Policy Adopted. — At its regular meeting, held April 22, 1933, the State Board of Public Health adopted the following outline of general policies relating to the service provided by the state bacteriological laboratory:

1. No specimens will be received at all from cities or counties having an approved public health laboratory.
2. Blood specimens to be examined as a check on treatment will not be received excepting for indigent cases, and from communities not excluded by paragraph 1.
3. Blood specimens will be received for purposes of diagnosis only from communities not excluded under paragraph 1.
4. The name and post-office address of every Wassermann patient must accompany the sample, and the question as to indigency must be answered.
5. The chief of the laboratory is authorized to mail a notification to each patient advising him that no charge is made by the state for the examination.
6. Blood specimens will be accepted from all state institutions and county hospitals without reservation other than that county hospitals receiving pay patients may send specimens only from patients who do not pay, so certifying on the form accompanying the specimens.
7. The Chief of the Bureau of Laboratories is authorized to refuse service to physicians who do not comply with the above requirements.

Summer Extension Classes in Bay Region.—The University of California Extension Division, which last year provided evening and day classes in a wide variety of subjects for more than 30,000 persons, has just announced that more than 250 new classes of instruction will be started in the Bay region during the months of August and September.

"There is no requirement for admission to a class other than the ability to pursue the work with profit," states Prof. Leon J. Richardson, Director of Extension.

A new schedule of classes will be available for distribution in August and may be obtained by communicating with one of the offices: in San Francisco, 540 Powell Street; Oakland, 1730 Franklin Street; Berkeley, 301 California Hall.

Among the new classes starting at 540 Powell Street, San Francisco, which might be of interest are the following:

French—Conversational.
Mr. J. Pajus. Tuesday, 3 p. m. Begins September 12.
French—Conversational.
Mr. J. Pajus. Friday, 8 p. m. Begins September 15.
French—Elementary.
Dr. J. de la Horpe. Monday and Wednesday, 7 p. m. Begins August 28.
French—Intermediate.
Dr. J. de la Horpe, Monday and Wednesday, 5 p. m. Begins August 28.
Russian—Elementary, I.
Mr. C. Malamuth. Monday, 7 p. m. Begins September 11.
Russian—Elementary, II.
Mr. C. Malamuth. Monday, 6 p. m. Begins September 11.
German—Elementary.
Dr. H. J. Weber. Tuesday, 7 p. m. Begins August 22.
German—Intermediate.
Dr. H. J. Weber. Monday, 7 p. m. Begins August 21.
Italian—Elementary.
Mr. U. P. Maggetti. Monday and Thursday, 7 p. m. Begins August 28.
Spanish—Elementary.
Mr. A. M. Berrien. Tuesday and Thursday, 7 p. m. Begins August 29.
Portuguese—Conversational, I.
Dr. J. R. S. Leite. Friday, 7 p. m. Begins September 15.
Portuguese—Conversational, II.
Dr. J. R. S. Leite. Friday, 8 p. m. Begins September 15.
Chinese—An Outline of Chinese Art and Culture.
Dr. H. H. Hart. Wednesday, 10:30 a. m. Begins September 13.
Chinese—An Outline of Chinese Art and Culture.
Dr. H. H. Hart. Wednesday, 8 p. m. Begins September 13.
Chinese—An Outline of the History of China.
Dr. H. H. Hart. Tuesday, 8 p. m. Begins September 12.
Philosophy—The Art of Thinking.
Dr. H. O. Blote. Tuesday, 10:30 a. m. Begins September 12.
Philosophy—The Art of Thinking.
Dr. H. O. Blote. Tuesday, 7 p. m. Begins September 12.
Philosophy—What Is Philosophy?
Dr. C. A. Hogan. Wednesday, 8 p. m. Begins September 20.
History of California.
Dr. C. J. DuFour. Wednesday, 7 p. m. Begins August 30.
History of Western Europe.
Associate Professor F. C. Palm. Thursday, 7 p. m. Begins August 24.
History of Hispanic America.
Professor C. E. Chapman. Thursday, 7 p. m. Begins August 31.
Music—A Review of Harmony.
Mr. A. I. Elkus. Tuesday, 7 p. m. Begins September 12.
Music—Fundamentals of Music Appreciation.
Mr. A. I. Elkus. Tuesday, 8 p. m. Begins September 12.

International Association for Prevention of Blindness.—Seven American ophthalmologists represented the United States at the recent annual meeting of the International Association for Prevention of Blindness at Madrid, Spain.

The principal topic of general discussion was "A Plan of International Classification of the Causes of Blindness." The American delegates presented the results of research during the past several years by the Committee on Statistics of the Blind, sponsored by the American Foundation for the Blind and the American National Society for the Prevention of Blindness.

The growth of the International Association since its establishment by the representatives of twenty-eight countries who met at The Hague on September 14, 1929, was reviewed by Prof. F. de Lapersonne of the University of Paris, president of the association. Despite the difficulties of a world-wide economic depression, said Professor de Lapersonne, the association has enlisted the support of public health and social welfare organizations in many countries.

Two of the principal directions in which the association is working, according to Professor de Lapersonne, are toward the prevention of industrial eye accidents and the establishment of "sight-conservation classes" for school children with seriously defective vision. In connection with the latter problem, he cited the fact that the association has taken up this question with the Child Welfare Committee of the League of Nations.

Infected Rodents Carry Plague.—No human cases of plague have occurred in California since 1929, but a considerable number of infected rodents have been discovered during the past two years. The State Department of Public Health has worked continuously during the past biennial period in its efforts to control the disease among rodents, both rats and ground squirrels, in order that the state may be protected adequately against a recurrence of this highly fatal disease. The department has maintained a crew of men in the rural districts, whose duty it is and has been to gather and examine ground squirrels for the presence of plague. Whenever infected rodents have been discovered, a campaign of destruction of all rodents within a large area surrounding the point of discovery of the infected rodent has been carried on. The various counties have coöperated with the State Department of Public Health in the destruction of ground squirrels, and many of the municipalities of the state where activities in the control of the rat population are carried on have contributed valuable assistance. The large amount of work that has been carried on along these lines is indicated in the biennial report of the Bureau of Sanitary Inspections.

This disease has been sleeping and waking in California for more than thirty years, and it is only through exerting continuous efforts against infected rodents that California is protected against this much to be feared disease. Plague will continue to be a menace to the health of Californians until such time as all possibility of rodent infection is removed.—*Weekly Bulletin, California Department of Public Health.*

California Industrial Accident Commission.—Workmen's compensation was made a law in California so that quick and speedy justice might be obtained by injured employees. Ever since its inception in 1911, there have been unwarranted criticisms about the delay in decisions. This arises mainly because the injured employee does not realize the true situation, which is that very often liability for the injury is assumed immediately by the employer or the insurance company and compensation is paid over a period of time. Before the expiration of jurisdiction of the commission a controversy arises between the parties which is submitted to the commission for decision. The records will show that in matters where the commission is called upon to give an original decision the period between the hearing and the decision averages two months, and the same is true as to supplemental matters. However, the injured employee very often considers that his case has been pending from the time of injury until the time of decision.

Injured employees will receive during the coming year approximately $5,250,000 in cash under the decisions of the Industrial Accident Commission. An equal amount will be awarded as medical expense.

Provide Protection Against Plagues.—The presence of National Guard reserve officers' training camps at Monterey and near San Luis Obispo, as well as in Santa Cruz County, has emphasized the importance of rodent control measures in the vicinity of such camps where large numbers of men are drawn from all parts of the state. It has been the policy of the Department of Public Health to maintain ten-mile squirrel-free zones around the centers of population. The establishment of such zones provides a wide measure of safety for the larger cities. It is only by carrying on activities of this sort intensively that any degree of assurance against the invasion of this highly fatal disease is granted. It is far cheaper to provide insurance of this sort than it is to carry on control work exclusively when cases of human plague occur. In the Los Angeles outbreak it was necessary for the city, county, and state to spend half a million dollars within a period of seven months in its work to place the outbreak under control. In addition to this amount, property owners of Los Angeles spent two million dollars in complying with rat-proofing ordinances.—*Weekly Bulletin, California Department of Public Health.*

TWENTY-FIVE YEARS AGO*

EXCERPTS FROM OUR STATE MEDICAL JOURNAL

Vol. VI, No. 7, July 1908

From some editorial notes:

County Officers.—Some time this fall (the exact date has not been set, but it will probably be in September) there is to be held a meeting of the presidents and secretaries of county medical societies with the officers of the State Society. The date and place will be announced later. This meeting is for the purpose of bringing together those who are closely in touch with organization work all over the state, to the end that we may come to a better understanding of conditions in the various counties, and study how to increase and improve the body upon which all medical organization is founded—the County Medical Society. . . .

A Valuable Department.—One of the very valuable departments of *The Journal of the American Medical Association* is that of Therapeutics. Often we feel keen regret that lack of space prevents us from reprinting the articles in this department in their entirety—anything else would be unsatisfactory. The conditions governing therapeutic requirements are so clearly and concisely—so sanely—put that they must be of value to every reader. . . .

The New Register.—For some weeks the work of compiling the new edition of the Register and Directory has occupied the attention of our office. It is hoped that the volume may be ready for distribution about the latter part of July or the middle of August, though the actual date is as yet uncertain. During the past year a spirit of maddening unrest seems to have pervaded the whole medical profession of the state and the number of changes of address is something wonderful and fearful. . . .

Article on Plague.—In this issue we begin the publication of a most valuable contribution to the literature of bubonic plague. Dr. W. C. Rucker, U. S. P. H. and M. H. S., has kindly translated for the JOURNAL, at no little personal sacrifice of time and trouble, an article by Le Dantec, which translation makes far and away the most comprehensive contribution to the subject that has yet appeared in English. There are no less than three distinct foci of plague on the Pacific Coast: San Francisco, the Bay counties, and Seattle. How long they will remain plague foci, no one can even guess; but that they will so remain for a period of time longer than it is pleasant to contemplate, no one at all conversant with the disease and its history will for a moment doubt. . . .

New State Journal.—Tennessee has joined the family of state organizations which publish a journal, and under date of June appears the first number of *The Journal of the Tennessee State Medical Association.* It is in every way a clean, dignified, well-published periodical, and is under the able editorial management of Dr. George H. Price, Nashville. . . .

From an article on "Acute Otitis Media in Infancy and Childhood" by H. Bert. Ellis, M. D., Los Angeles.

Diseases of children have been and still are neglected to a great extent; more neglected than any other branch of the practice of medicine. This is largely due

(Continued on Advertising Page 18)

BOARD OF MEDICAL EXAMINERS OF THE STATE OF CALIFORNIA†

By CHARLES B. PINKHAM, M. D.
Secretary-Treasurer

News Items

"Regulations for the supervision of more than one thousand clinics and dispensaries today were being prepared by the State Board of Public Health, which is charged with enforcement of the Clinic Law, signed by Governor Rolph. With certain exceptions, it was pointed out By Dr. Giles S. Porter, Director of the State Department of Public Health, all clinics and dispensaries in the state are required by this new law to be licensed each year. The exceptions are for those operated by the Federal Government, those operated by employers without profit, for the sole benefit of their own employees, and research clinics working under nonprofit foundations registered with the United States Government for tax exemption." (San Francisco *Call-Bulletin,* June 8, 1933.)

"After deliberating only fifteen minutes, a jury in Municipal Judge Lazarus' court found Dr. N. S. Housman not guilty last night on charges of failure to record disposition of narcotics. . . . A previous trial resulted in disagreement." (San Francisco *Examiner,* May 25, 1933.)

"The conviction of Mrs. Margaret Browning, operator of a so-called 'abortion farm' near Chowchilla, Madera County, today was affirmed by the Third District Court of Appeal. Mrs. Browning, convicted of performing an illegal operation, . . . appealed her case principally on the ground that a part of the trial was held during the banking holiday proclaimed by Governor Rolph and therefore was irregular procedure. The Appellate Court ruled that while a court trial held on a holiday over the objection of the defendant would be void and irregular, it also held the defendant in this particular case waived her rights by not making a timely objection. Her attorneys argued the case on the first day of the holiday. Mrs. Browning also contends the judge and prosecuting attorney were prejudiced in the proceedings. In this regard the Appellate Court remarks: 'We have read carefully the entire record and observe no evidence of unfair treatment to the defendant.' The higher court likewise states there is nothing to support the appeal contending the judge delivered 'misleading, confusing, and erroneous' instructions to the jury, nor showed prejudice by not delivering certain instructions for the defendant." (Sacramento *Bee,* May 20, 1933.) (Previous entry, May, 1933.)

"State narcotic officers yesterday arrested Dr. Arthur L. Davis, West Los Angeles physician, on suspicion of sale and possession of morphin. Mrs. Jean Davis, wife of the doctor, was also held on suspicion of possessing morphin. . . . " (Los Angeles *Examiner,* May 13, 1933.)

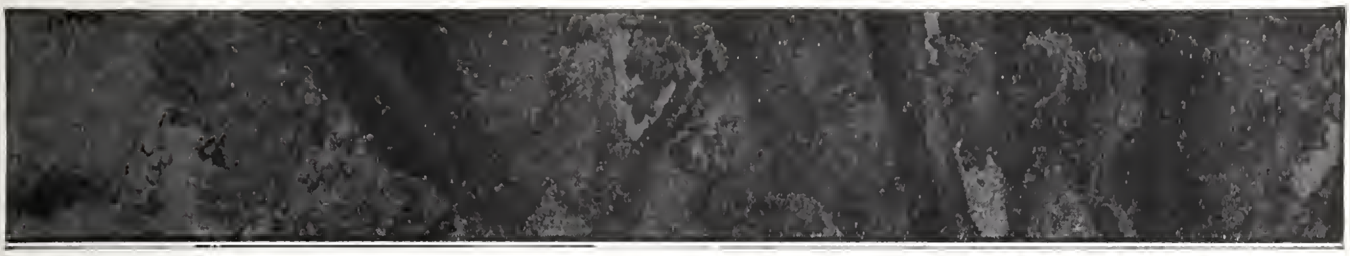
"Convicted on four counts of violating the Harrison Narcotic Act, Dr. Roy F. Ruth, physician with offices in the Taft Building, and Johnny Golinda, former prize fighter, today awaited imposition of sentence Monday. The two were found guilty in the United States court yesterday. Doctor Ruth continued his liberty on a $2,500 bond. The fighter was returned to jail." (Hollywood *Citizen,* May 26, 1933.)

(Continued on Advertising Page 19)

---

* This column strives to mirror the work and aims of colleagues who bore the brunt of society work some twenty-five years ago. It is hoped that such presentation will be of interest to both old and recent members.

† The office addresses of the California State Board of Medical Examiners are printed in the roster on advertising page 6.



One of a series of advertisements prepared and published by PARKE, DAVIS & COMPANY in behalf of the medical profession. This "See Your Doctor" campaign is running in the *Saturday Evening Post* and other leading magazines.

There are Phantoms abroad

THE PAST FEW YEARS have been years of worry Fears have walked abroad. Nerves have been harassed as never before.

And everyone knows what tricks a jangled nervous system can play upon the imagination. Little things are magnified by worry . . . magnified into ills that seem distressingly real but are actually only *phantoms*.

Unfortunately, the very worry which causes these ills also tends to keep people from going to the one person they should call upon—the doctor. Their worry makes them afraid they might hear bad news from the doctor's lips. So they stay away at the time when a visit to the doctor might have an important bearing on their whole lives.

For certainly the safest way to deal with real illness is to avail one's self of the doctor's help and understanding. And the surest way to dispel any phantom is to throw a strong light on it—in the case of phantom ills, the keen and benevolent light of medical knowledge.

If, therefore, you have the feeling that all is not well in that complex piece of machinery called your body, see your doctor

If the ailment is real, the doctor can start immediately to use the latest methods of medical science in dealing with the troubles that are plaguing you. If the ailment is imaginary, the phantom may be dispelled at once, and you will walk out of the doctor's office with renewed courage to face a world that is ready to reward courage.

PARKE, DAVIS & COMPANY
DETROIT, MICHIGAN
The World's Largest Makers
of Pharmaceutical and Biological Products

COLLECTIONS

CREDIT RATINGS
TRACING (Lost Debtors)

ACCOUNTING and
OFFICE SUPERVISION

Organized and Operated FOR YOU

The Doctors Business Bureau

ESTABLISHED 1916 • • EXCLUSIVELY FOR DOCTORS

310–319 Bank of America Building
SAN FRANCISCO

Sixth Floor, Spreckels Building
LOS ANGELES

OAKLAND SALT LAKE CITY

(Continued from Page 31)

cal facilities, improvements in diagnostic methods, and increased use of these techniques. Many cases are discovered through the physical examinations of supposedly healthy persons, largely through the instrumentality of life insurance. These factors have not actually added a single case to the incidence of diabetes; they have only brought them to light.

In contrast with these items, a number of causes have been at work during the last generation which in a very real sense have increased the number of diabetics. First of these social forces was the improvement in the standards of life of the population. On all sides the average citizen could enjoy, and did enjoy, the use of more and better food and other comforts of life. At the same time there was increased use of machinery, resulting in a greater mechanization of industrial processes, and even of home activities, with a constant movement of more and more people to industrial employment, accompanied by decreased use of energy in doing their work.

So the situation is seen to grow out of two forces, both operating to disturb the metabolic equilibrium of large numbers of persons. On the other hand, more and richer food materials were taken in and, on the other, less energy was called upon to burn it up. The net result was overfeeding, and in the long run an increase in the number of overweight, and even obese, persons. Among these, diabetes takes its greatest toll.

The problem is not hopeless, although circumscribed. It is one of controlling the disease among older persons, chiefly among women. Insulin does not cure diabetes; but it does prolong the lives of diabetics, even to the point where they succumb, much as do other old persons, to such ailments as heart disease, nephritis, arteriosclerosis, and cerebral hemorrhage.

There are things that can be done to improve the situation. There are too many premature deaths from coma; death from cardiovascular degeneration can be postponed to a much greater extent; there are very many cases which are not diagnosed as early as they should be. All these things call for action.—*Ohio Health News.*

Knowledge Is Power.—Amazing progress has been made in medical and surgical science in the short span of fifty years. Nevertheless, the fact remains that an intelligent conception of the individual's responsibility toward disease prevention is just as essential today as it always has been. Indeed, there is more reason for it now than ever before.

Thanks to the miraculous and spectacular discoveries of that untiring and frequently heroic group known as the research workers, many of the mass hazards that formerly brought premature death to hundreds of thousands no longer exist. Veritably, group safety is on an unprecedentedly high plane.

Unfortunately, however, the human being is limited in his delegation of health conservation. He can leave pure water, safe milk and the control of many of the contagious diseases to the laboratory and the public health official. But with these things properly entrusted to others, a very big individual job yet remains if personal health and reasonably long life are to be enjoyed.

It is at this point that so many fail. Resting in the false security of scientific achievement, the average person is likely to view health largely as an academic and abstract proposition; and this, despite the high-powered exploitation of the health urge to which he is constantly subjected by way of the radio, syndicated health articles, popular health stories and attractive advertising. Apparently this type of citizen somehow arrives at the dangerous conclusion that public health officials have a corner on health-concern. What a pathetic vagary!

Of course, health officials do their part, and do it magnificently. But when it comes to regulating the daily actions and habits of 120,000,000 free citizens, they are naturally helpless.

CANYON SANATORIUM
REDWOOD CITY, CALIFORNIA

An Open Air Sanatorium for the Treatment of Tuberculosis and Diseases of the Chest.

NESTLED IN THE FOOTHILLS
For Booklet giving full particulars write
RALPH B. SCHEIER, M. D., *Medical Director* JOHN C. SHARP, M. D., *Assistant Medical Director*
San Francisco Office: 490 POST STREET , *Telephone* DOUGLAS 4486

Indeed, public health administration in all its protective phases but supplements routine living. If this routine is mainly destructive, then present-day science, however great and powerful it may be, will be of little avail to the individual involved.

Therefore, to know one's physical limitations and respect them is one of the secrets of a healthy existence. Knowledge is power. But in this instance it demands personal knowledge personally applied—and not the other fellow's!—*Pennsylvania's Health.*

The Nation's Health Center.*—Symbolic of its eminence in medical research and public health conservation, the National Institute of Health of the United States Public Health Service stands on a hill in the city of Washington, overlooking the Potomac River and surrounding countryside. The little red brick buildings which house it have seen the dawn of preventive medicine and occupy a central place in the efforts which have been made to rid the world of diseases that are preventable. It has existed as the government's research laboratory, an integral part of the United States Public Health Service since 1887. In that year it came into being as a small laboratory located at the Marine Hospital in New York. In 1901, congress moved it to Washington, appropriated $35,000 for a building, and gave it the name of Hygienic Laboratory.

From this small beginning the Hygienic Laboratory developed until 1930, when the Ransdell act was passed creating the National Institute of Health, with the laboratory equipment and scientific organization as a nucleus, and appropriating $750,000 for new buildings which are now nearing completion on the site of the Institute in Washington.

The Ransdell act has three distinct features: First, it creates the National Institute of Health "for the special purpose of pure scientific research to ascertain the cause, prevention and cure of disease affecting human beings."

Second, it authorizes the Treasury Department to accept gifts unconditionally for study, investigation and research into health problems, with the proviso that if gifts in the sum of $500,000 or more are made, the name of the donor shall be perpetuated by establishment of a suitable memorial in the Institute. This is an unusual provision in legislation, though not without precedent. The Smithsonian Institution and the Library of Congress are instances worthy of note in which such gifts are permitted.

Two of the contributions thus far received indicate the universality of the gifts that may be used to combat disease at the Institute. One of $100,000 was given by the Chemical Foundation, Inc., of New York, though its president, Francis P. Garvan. Another of $1 was given by Charles P. Wilder, of Worcester, Massachusetts. It is the purpose to encourage small contributions as well as large ones, not alone for the purpose of building up the funds at the disposal of the new research institution, but because of the widened public interest which will thus be generated.

The third feature of the law proposes the establishment and maintenance in the Institute of a system of fellowships in scientific research. This provision is considered outstanding. Its purpose is to enlist a strong personnel and to encourage and aid men and women of marked ability to engage in research.

While it is contemplated that most of the research work will be done in the Institute laboratories in Washington, this is not required by the act. Under the law, the fellows may be assigned to institutions in any part of the world.

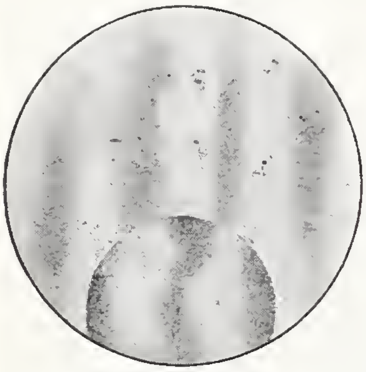
The value of research is not immediately apparent to the layman, who sees only the end-result, but its indispensable character is obvious to the practicing physician. Without it such diseases as yellow fever,

(Continued on Next Page)

---

* By Joseph E. Ransdell, Executive Director of the Conference Board of the National Institute of Health.

SOFT-LITE N-D



Soft-Lite glass is in its 25th year of successful use as a scientific and practical aid to comfortable vision.

Will appeal to you—*because*

It is ground on Orthogon Wide Vision Curves. It absorbs glare neutrally over the visible spectrum.

And to your patients—*because*

It is the Most Invisible bifocal made. Segment is color free with no annoying color fringes.

RIGGS OPTICAL COMPANY

Established in Sixty Western Cities

ASSOCIATED OPTICAL COMPANY

LOS ANGELES SAN DIEGO PHOENIX LONG BEACH SANTA ANA

THE SAN FRANCISCO BANK

SAVINGS COMMERCIAL TRUST

INCORPORATED FEBRUARY 10TH, 1868

One of the Oldest Banks in California, the Assets of which have never been increased by mergers or consolidations with other Banks.

MEMBER ASSOCIATED SAVINGS BANKS OF SAN FRANCISCO

526 California Street, San Francisco, Cal.

June 30th, 1933

Assets	**$159,206,708.91**
Capital, Reserve and Contingent Funds	**$6,500,000.00**

The following accounts stand on the Books at **$1.00** *each, viz.:*

Bank Buildings and Lots	(Value over **$2,100,000.00**)
Other Real Estate	(Value over **$520,000.00**)
Pension Fund	(Value over **$800,000.00**)

MISSION BRANCH	Mission and 21st Streets
PARK-PRESIDIO BRANCH	Clement St. and 7th Ave.
HAIGHT STREET BRANCH	Haight and Belvedere Streets
WEST PORTAL BRANCH	West Portal Ave. and Ulloa St.

Interest on Deposits is Computed Monthly and Compounded Quarterly, and may be withdrawn quarterly.

(Continued from Preceding Page)

smallpox, diphtheria, typhoid fever and many other dread killers would still hold unutterable horror for man. As a result of the untiring efforts of workers, it is now within the realm of possibility that many other diseases—cancer, respiratory diseases, heart affections—will soon be as rare as those others which have fallen before the onslaughts of science. From the laboratories of the quiet, unassuming men, who work with germs and bugs in order that life may be made longer and happier, the knowledge has come that made possible the lengthening of the life span by fifteen years in the past century.

It is with research and the standardization of drugs that the National Institute of Health is concerned. Its staff, highly trained and efficient, concerns itself with the diseases that afflict man, with the single-minded idea of making the lives of people freer from crippling disease and of adding to the happiness and economic greatness of the world.

The National Institute of Health has been of tremendous aid to research. While it is not possible to set down here the total of its accomplishments and contributions to science, a few points may be noted in connection with past and present work.

From the Institute have come Doctor Goldberger's monumental work in the discovery of the cause and prevention of pellagra; Doctor Francis' work on tularemia; Doctor Spencer's work on spotted fever, and his discovery of a protective vaccine; the discovery of Doctors Dyer, Rumerich and Badger of an eastern form of spotted fever, which may prove to be one of our most important public health problems; Professor Voegtlin's fundamental work in the metabolism of normal and cancer cells; and Professor Hudson's contributions to the work on the chemical structure of sugars.

At the present time studies are in progress at the Institute relating to nutrition, cancer, typhus-spotted fever, tularemia, undulant fever, meningitis, infantile paralysis, ginger paralysis, fundamental researches on sugars, and many other problems relating to the health of man. Through its work in the control and standardization of biologic products, the Institute has

THE ANESTHETIST MUST HAVE
FAULTLESS EQUIPMENT

PERIODICALLY, we call to inspect your anesthetic equipment. This service is offered whether you use our equipment or not. It is based on the realization that *the anesthetist must have faultless equipment*. Day and night emergency service is maintained constantly for servicing and supplying apparatus for purchase or rental.

We distribute several lines of equipment, all made to the highest known standards. And, while none of it is made in our own plant, it is subjected to our own rigid inspection. The same policy of critical analyses of mechanism prevails with the same relentless vigilance as with our own medical gases. It is a fixed policy.

Certified Gases
NITROUS OXIDE · ETHYLENE · CARBON DIOXIDE
CARBOGEN · MEDICAL OXYGEN

CERTIFIED
LABORATORY PRODUCTS, LTD.
1379 Folsom St., San Francisco 1503 Gardena Ave., Glendale, Calif.
WEST COAST HOSPITAL SUPPLY COMPANY
Pacific Northwest Distributors
25 E. Sixth Street, Portland, Ore. 408 Battery Street, Seattle, Wash.

probably rendered its greatest service to the people of the United States in safeguarding the numerous serums and vaccines placed on the market. A number of biological standards worked out at the Institute have been adopted by foreign countries.

The possibilities of the National Institute of Health have never been more clearly brought out than by the Senate Committee on Commerce in its report of the Ransdell bill:

"It is confidently believed," said the committee, "that if there is brought together in one central place under one directing head the ablest experts in the sciences of medicine, surgery, chemistry, physics, biology, bacteriology, pharmacology, pharmacy, dentistry, etc., and a concentrated, united effort for a term of years is made by them against disease, singling out first the more important maladies, such as cancer, tuberculosis, the common cold and pneumonia, success will result therefrom. While remarkable and most beneficial efforts have been made in the war against disease by our great medical schools and endowed institutions, there has never been in any one place a combination and concentration of all the branches of science such as is contemplated in the National Institute of Health."—*Pennsylvania's Health.*

Radium Production in Canada.*—Humanity proclaimed the discoveries of M. and Mme. Curie in radium and radioactivity as the answer to man's prayer for a weapon in his battle against disease; scientists heralded them as the key to the age-old problem of alchemy and transmutation of matter; industry looked forward to the day when a new source of energy would be unloosed.

Today, in Canadian laboratories, another step toward fulfillment of this thirty-five-year-old dream has been taken with the development of a distinctive formula for the treatment of Canadian pitchblende ores. By this formula, it is anticipated, production of radium in its commercial forms can be carried out on a larger scale in Canada, with similar processes and lower costs than anywhere else in the world.

By dint of steady climbing, Canada has won distinction as one of the world's greatest producers of precious and utilitarian metals, ranking first in nickel and asbestos, second in gold, platinum and cobalt, third in silver, and fourth in copper, lead and zinc. Undoubtedly Canadian prestige in the field of mining and metallurgy stands to be substantially strengthened as a result of the opening of radium reduction on a commercial scale, to be undertaken at Port Hope.

While several unknown factors prevent a definite estimate of the probable value of Canadian production of radium, or how far its benefits can be extended, the probability is that Canada will soon present a definite challenge to the existing Belgian monopoly for at least second place, and possibly for absolute supremacy, in the world's radium markets.

All the world has heard of the series of accidents which led to the study of a strange phosphorescence observed floating over a pile of uranium ore in the laboratories of M. and Mme. Curie, and their subsequent announcement that they had discovered and isolated a new and remarkable element which they named radium. That was thirty-five years ago. Some years later, another French scientist, Henri Becquerel, arriving in London from Paris with a tube of radium salts in his pocket, found himself suffering from burns which required weeks to heal. The mysterious rays, at first called "lumiere noire" or "black light," were found to have a penetrating power. Closer study found the new element emitting energy in the form of explosive atoms. Since the dawn of knowledge science has dreamed of the discovery of such a new source of energy in matter. Here was one more formidable than

(Continued on Next Page)

---

* Abstracted from newspaper articles written by E. D. Loney in *The Sudbury Star*, Sudbury, Ontario, and *The Toronto Globe*, Toronto, Canada, October, 1932.

St. Luke's Hospital
SAN FRANCISCO
A Limited General Hospital of 200 Beds

BENJAMIN H. DIBBLEE, *President*
I. C. KNOWLTON, *Secretary*

Executive Committee
ALANSON WEEKS, M. D., *Chairman*
GEORGE D. LYMAN, M.D.
HAROLD P. HILL, M. D.
W. G. MOORE, M. D.

HOWARD H. JOHNSON, M. D.
Secretary and Medical Director

Fully approved by the American College of Surgeons and the American Medical Association for Resident and Intern Training.

Limited Facilities for Part-Pay Treatment

Hydro-Electro and Physiotherapy Building

Alexander Sanitarium
Incorporated
Belmont, California
Telephone Belmont 40 P. O. Box 27

Hydro-Electro and Physiotherapy Treatments. Specializing in Recuperative and Nervous Cases. Homelike Atmosphere. Absolutely Modern in every respect. Inspection invited.

22 Miles from San Francisco—Situated in the beautiful foothills of Belmont, on Half Moon Bay Boulevard. The grounds consist of seven acres studded with live oaks and blooming shrubbery.

Just the place for the overworked, nervous and convalescent. Number of patients limited. Physician in attendance.

Address ALEXANDER SANITARIUM
Phone Belmont 40 Box 27, Belmont, Calif.

(Continued from Preceding Page)

all those previously known. They called it intra-atomic energy. Since then radium treatment of disease, named Curietherapy, in homage to the work of M. and Mme. Curie, has developed to a stage where radium and radon gas are recognized by highest medical authorities as a definite aid in combating cancer.

Barred from universal use by a unique scarcity in nature, the new element was soon recognized by European monopolists as a heaven-sent opportunity for capitalizing an insatiable thirst of science and the cries of suffering humanity. As a result, radium has seldom, if ever, been produced free of monopolistic control. After thirty years it remains still the least known of all natural substances.

Prospecting began in almost every country in the world for deposits of uranium, recognized as the parent of radium element. The first source of radium became the uranium mine at Joachimsthal, in Bohemia. The mine was owned by the Austrian government and the export of the mineral was prohibited. Search for radium-bearing veins was so successful that Portugal, England, United States, Mexico and the Indies ultimately claimed deposits. The most important find was that of a rich carnotite bed extending through a wild waste in Colorado and Utah. In 1914 as much as 22.5 grams were produced in the United States and the American government started measures to create their own monopoly. All the radium found in the United States prior to January 15, 1914, was retained by the owners, but after that date all radium discovered was to become the property of the government. The American monopoly was enjoying prices of $100,000 a gram, when a new discovery was brought to light near the rich copper-bearing deposits of the Union Minière du Haut Katanga, situated in the Belgian Congo. Whereas the American radium occurred in carnotite with a meager yield of one gram of radium for every 400 tons of ore, the Belgian supply came from very rich veins of pitchblende. From the first a great deal of secrecy enveloped the operation. Although the average grade, extent of the ore and the cost of reduction have never been discovered, the ore was sufficiently rich to enable the Belgian operators to offer radium at prices with which the American monopoly could not compete. By 1921 a radium reduction process for pitchblende ores had been evolved and a plant was established at Oolen, Belgium. By 1923 this plant was producing an average of about four grams per month and the price had dropped from $100,000 a gram to $70,000 a gram and $50,000 a gram for bulk sales. In a short time the Colorado works were shut down and for the past ten years the Union Minière du Haut Katanga had held undisputed sway in which is probably the greatest and one of the most powerful of world monopolies.

This was the picture into which Gilbert Labine, the Canadian prospector, stepped on May 16, 1930, when he camped beside a splash of ochre stain on the east shore of Echo Bay at Great Bear Lake. The rocks for miles at that point were encrusted with stain which Labine had first noticed the year before while flying over the country in search of the mineral which Indian tradition and old geological survey reports hinted must be found in the Great Bear Lake and Coppermine regions. Samples of his discovery shipped out to Ottawa were readily identified as pitchblende, rich in radium. Further examination revealed three definite pitchblende veins several inches wide and one traceable from the water's edge up 100 feet of incline for a distance of 1,400 feet. Since then, further discoveries have confirmed the belief of pioneers that Great Bear Lake contains the world's largest known deposits of radium ores.

Vocabularies have been exhausted in efforts to adequately describe the mining possibilities in radium and silver offered by the Great Bear Lake field. Color has been splashed lavishly over the trail of the pioneers who have responded to the lure of a new and remote Eldorado. An equally romantic story was

SOILAND CLINIC

Drs. Soiland, Costolow and Meland

1407 South Hope Street, Los Angeles, Calif.

Telephone PRospect 1418

HOURS: 9:00 to 4:00

A medical group organized and equipped for the study, diagnosis and treatment of neoplastic and allied disease.

ALBERT SOILAND, M D.
WM. E. COSTOLOW, M. D.
ORVILLE N. MELAND, M. D.
A. L. LINDBERG, M. D., *Pathologist*
A. H. WARNER, Ph. D., *Physicist*

SEVEN YEARS' USE
has demonstrated the value of
THE SURGICAL SOLUTION
of
MERCUROCHROME,
H. W. & D.
in
Preoperative Skin Disinfection

•

This preparation contains 2% Mercurochrome in aqueous-alcohol-acetone solution and has the advantages that:

Application is not painful.
It dries quickly.
The color is due to Mercurochrome and shows how thoroughly this antiseptic agent has been applied.
Stock solutions do not deteriorate.

•

Now available in 4, 8 and 16 oz. bottles, and in special bulk package for hospitals.

Literature on request

HYNSON, WESTCOTT & DUNNING, Inc.
Baltimore, Maryland

meanwhile being woven at Ottawa, where R. J. Traill and W. R. McClelland, chemists of the Department of Mines, pursued their slow and tedious process of "taming" this violent newcomer to the Canadian mineralogical zoo. Since Great Bear Lake is under the sole jurisdiction of the Dominion government, the problem of finding a solution to the complicated metallurgy of radium-bearing ores fell upon the Department of Mines.

Mr. Traill reports as follows: "The most important point is that we have reduced the length of the operation necessary to produce radium salts from three months, which is the time we believe is required by the Belgian process, to less than half that period. We also think, partly on this account and partly due to the high grade character of the Canadian ores, that the cost of reduction by our process will be considerably less than the Belgian method. By using hydrochloric acid as a solvent, instead of the usual sulphuric acid, we have eliminated a large number of stages with the result that instead of about forty operations which the Belgians are supposed to use, we are now producing radium salts with less than half this number. The chief cost of the reduction of radium lies in the cost of chemicals, as we use about three tons of chemicals for every ton of ore treated."

The distinctive property of radium and all radioactive elements is the spontaneous disintegration of their atoms. Three types of rays are emitted, alpha, beta and gamma. Alpha rays are stopped by a piece of paper or tinfoil. Beta rays travel at a speed of from 50,000 to 299,000 kilometers per second and will penetrate a thin sheet of aluminum. Gamma rays do not consist of matter, but are ether vibrations of very short wavelength. They travel with a speed much greater than light and have power to penetrate a foot of solid iron. The life of a gram of radium is estimated in the neighborhood of 2,500 years, and after 1,650 years of disintegration, more than half of its energy will still be remaining. Normally, one gram emits enough heat to raise its own volume of water from freezing point to boiling point every hour, and in the course of its lifetime, has the potential energy of 3,000 tons of coal.

Up to the present time, its chief practical application has been in therapeutics. Cancer, lupus, rheumatism, etc., have surrendered to treatment from its rays. The practical application of radium to modern industry, however, still remains practically unexplored.

The only radium refinery in the British Empire is operating in the quiet Ontario town of Port Hope, and its product will go to all parts of the world. Made from Canadian ore, shipped by Canadian airways to an all-Canadian plant, the radium will be Canada's challenge to the Belgian syndicate which now controls the world's supply.

Fifty-six tons of pitchblende are stacked at the El Dorado plant at Port Hope. It averages between 40 and 50 per cent uranium oxid and will produce about 125 milligrams of refined radium to the ton. The present price of radium is about $7,000 a milligram. Airplanes solved the transportation problem of the ore. By air it was carried to junction points, where it was transferred and shipped by water and rail to Port Hope and Ottawa. The cost was somewhere around $400 a ton, but the ore will bring a price which will provide tremendous profits.

Mme. Curie, who has been handicapped in her work by lack of radium, will use Canadian radium in her researches. Arrangements for supplies were recently made with Major Bernard Day, representative of Canadian radium interests.

In the meantime, scientists and mining engineers all over the world are watching developments at Port Hope.—News item, *New York Times*, December, 1932.

It is better for a man to maintain himself in good health than to load himself with learning.—Arnold Bennett (1920).

Colfax School for the Tuberculous

Colfax, California

(Altitude 2400 feet)

This institution is for the treatment of medical tuberculosis and of selected cases of extrapulmonary (so-called surgical) tuberculosis.

The Colfax School for the Tuberculous consists of five Hospital Units with beds for patients who come unattended and a Housekeeping Cottage Colony for patients and their families.

The Colfax School for the Tuberculous offers the following advantages:

1. Patients are given individual care by experienced tuberculosis specialists. The patient is treated according to his individual needs.

2. Patients are taught how to secure an arrest of their disease, how to remain well when once the disease is arrested, and how to prevent the spread of the disease.

3. Patients have the advantage of modern laboratory aids to diagnosis and of all modern therapeutic agencies.

4. The climate of Colfax enables the patient to take the cure without discomfort twelve months in the year. We believe climate is secondary to medical supervision and rest, but the fact remains that it is easier to "cure" under good climatic conditions than where these climatic conditions are absent.

5. Colfax is accessible. It is on the main line of the Ogden Route of the Southern Pacific R. R. and has excellent train service. It can be reached by paved highway, being on the Victory Highway, with paved roads all the way to Colfax.

For further information address

ROBERT A. PEERS, M. D., *Medical Director*
Colfax, California

NEXT ANNUAL SESSIONS
California Medical Association, Riverside, April 30–May 2, 1934
Nevada State Medical Association, Las Vegas, Nevada, September 29-30, 1933
American Medical Association, Cleveland, Ohio (Meeting Date Later)

CALIFORNIA AND WESTERN MEDICINE

Owned and Published Monthly by the California Medical Association
FOUR FIFTY SUTTER, ROOM 2004, SAN FRANCISCO
ACCREDITED REPRESENTATIVE OF THE CALIFORNIA AND NEVADA MEDICAL ASSOCIATIONS

VOLUME XXXIX
NUMBER 2
AUGUST · 1933
50 CENTS A COPY
$5.00 A YEAR

CONTENTS AND SUBJECT INDEX

SPECIAL ARTICLES:

Pernicious Anemia—Its Nature and a Consideration of Recent Advances in the Treatment of the Disease. By Cyrus C. Sturgis and Raphael Isaacs, Ann Arbor, Michigan 73

Some Observations on the Altered Physiology of Hypophysectomized Albino Rats. By Howard A. Ball, San Diego 78

Living Grafts of Endocrine Glands. Part III. By Harvey B. Stone, James C. Owings, and George O. Gey, Baltimore, Maryland 81

The Knee Joint—Its Functional Anatomy and the Mechanism of Certain Injuries. By John B. deC. M. Saunders, San Francisco 83

Peptic Ulcer—Its Roentgen Diagnosis. By M. J. Geyman and D. M. Clark, Santa Barbara 86
Discussion by Kenneth S. Davis, Los Angeles; R. G. Taylor, Los Angeles; Howard E. Ruggles, San Francisco.

The Morphology of the Erythrocytes in Cirrhosis and Other Disorders of the Liver. By Garnett Cheney, San Francisco 90

Functional Disorders of the Colon. By Fred H. Kruse, San Francisco 97
Discussion by Franklin R. Nuzum, Santa Barbara; R. Manning Clarke, Los Angeles; Herold P. Hare, Los Angeles.

Murderers' Row. By Thomas J. Orbison, Los Angeles 104
Discussion by Joseph Catton, San Francisco; Thomas G. Inman, San Francisco; Paul E. Bowers, Los Angeles.

Adherent Scars—Their Treatment. By W. S. Kiskadden, Los Angeles 109
Discussion by George Warren Pierce and Gerald Brown O'Connor, San Francisco; Hugh Jones, Los Angeles; Will L. Miles, Los Angeles.

Infections of the Genito-Urinary Tract. By Miley B. Wesson, San Francisco 113
Discussion by Thomas W. Bath, Reno, Nevada; Burnett Wright, Los Angeles; Lloyd Kindall, Oakland.

THE LURE OF MEDICAL HISTORY:

Johann Sigismund Elsholtz. Part III. By Ethel Gladstone, San Francisco 119

CLINICAL NOTES AND CASE REPORTS:

Skeletal Traction. By H. W. Spiers, Los Angeles 123

Bladder Neck Pathology in the Female. By Clayton Lane, Los Angeles 124

BEDSIDE MEDICINE:

Urticaria 125
Discussion by Merlin T-R. Maynard, San Jose; Moses Scholtz, Los Angeles; Samuel H. Hurwitz, San Francisco.

EDITORIALS:

Library Building of the Los Angeles County Medical Association 128

"The Committee on Professional Conduct"—A New Procedure Inaugurated by the San Francisco County Medical Society 128

Eighty-Fourth Annual Session, A. M. A.—Some House of Delegates Proceedings 129

EDITORIAL COMMENT:

Postoperative Distention. By Alanson Weeks and G. D. Delprat, San Francisco 132

The Krueger Pertussis Antigen. Part VII. By W. H. Manwaring, Palo Alto 133

Theobromin Reënforcement of Digitalis Action. By Louis Baltimore, Los Angeles 133

STATE MEDICAL ASSOCIATIONS:

C. M. A. DEPARTMENT OF PUBLIC RELATIONS 135
CANCER COMMISSION 136
CALIFORNIA MEDICAL ASSOCIATION 140
The Woman's Auxiliary to the California Medical Association 141

MISCELLANY:

News 142
Correspondence 143
Twenty-Five Years Ago 144
Board of Medical Examiners of the State of California 144
California Medical Association Directories .... Adv. pages 2, 4, 6
Book Reviews .... Adv. page 11

ADVERTISEMENTS—INDEX:

.... Adv. page 8

"Entered as second-class matter at the post office at San Francisco, California, under the Act of March 3, 1879." Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized August 10, 1918.

GREENS' EYE HOSPITAL

. . . for Consultation, Diagnosis, and Treatment of the Eye

BUSH AT OCTAVIA STREET

San Francisco

Telephone
WEst 4300

THE HOSPITAL

As an aid in the study and diagnosis of eye conditions, Greens' Eye Hospital maintains a fully equipped

Ear, Nose, and Throat Department

This department is conducted on the same basis as the eye clinic and is open to all patients for the treatment of Ear, Nose, and Throat.

●

EMERGENCY EYE SERVICE

A twenty-four hour emergency eye service including Sundays and holidays is now available with an Ophthalmologist on duty.

Staff

OPHTHALMOLOGY

Aaron S. Green, M. D.
Louis D. Green, M. D.
Martin I. Green, M. D.
Einar V. Blak, M. D.
Vincent V. Suglian, M. D.

OTOLARYNGOLOGY

Lafayette P. Monson, M. D.

Address Communications to Superintendent

BUSH

Patronize Your Home Firm

Because We Are Progressive

ANNOUNCEMENT

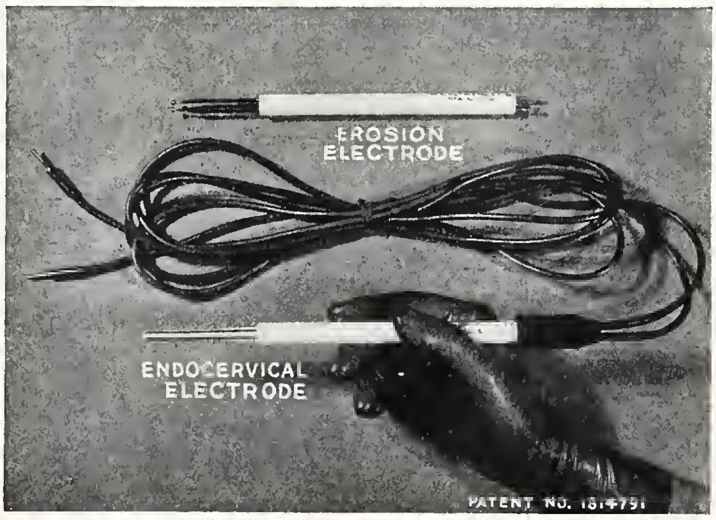
New location at 2016 Wilshire Boulevard, one-half block east of West Lake Park. Our new, modern building, recently completed, was built for our special requirements with a six-car garage attached for your convenience. You will be welcome.

SOMETHING NEW!! Do not fail to see it

The Ende Endocervical and Erosion Electrode Set

Consisting of:

- 1 Ende Endocervical Electrode
- 1 Ende Erosion Electrode
- Two Ball Tips
- Two Needle Tips
- Steel Wool, rubber tube and test tube for egg albumin
- Soft rubber socket with rubber covered wires (boilable)



Pat. Applied For

Serial No. 275154

Bi-Polar—Made of Porcelain—Boilable

THE Ende Endocervical Electrode is the result of a long search for a more accurate means of destroying the endocervix than is possible with either the cautery or diathermy applied in the usual manner. When the technique which is described in the following paragraphs is followed, the operator is able to destroy tissue with absolute uniformity. An accurately measured power is permitted to flow through tissue for a definite period of time which meets the requirements of the formula for the measurement of electrical work, i. e., *work equals power times time.*

The application of this formula to cautery treatment is impossible because of the difficulties encountered in the estimation of the temperature of the tip which constitutes the power, and in the use of diathermy when an indifferent electrode is employed the long pathway, with its high resistance, makes the measurements of the power equally difficult. This resistance is subject to considerable variation in different individuals, and it must be overcome by increasing the power to meet the needs of the case. When the Ende Electrode is used this is unnecessary because the pathway is reduced to an eighth of an inch, and lies entirely in cervical tissue. The mucous in the cervical canal acts as a contacting medium and increases the efficiency of the treatment. In using the cautery the mucous quenches the cautery tip to such a degree that uniform destruction of the endocervix is practically impossible.

Apparatus

The smallest Diathermy machine available will deliver sufficient power to meet the requirements of this technique, and if a large machine is used the medium or low output terminals should be chosen because of the unnecessarily high voltage of a large machine. A foot switch is essential in the treatment of these cases so that the power may be under constant control.

Price and complete operative instructions will be mailed upon request

---

BUSH ELECTRIC CORPORATION

334 Sutter Street
SAN FRANCISCO, CALIF.
EXbrook 5090

2016 Wilshire Boulevard
LOS ANGELES, CALIF.
EXposition 1189

BUSH

Officers of the California Medical Association

General Officers

President—George G. Reinle, 204 Dalziel Building, 532 Fifteenth Street, Oakland.

President-Elect—Clarence G. Toland, 902 Wilshire Medical Building, 1930 Wilshire Boulevard, Los Angeles.

Speaker of House of Delegates—Edward M. Pallette, 502 Wilshire Medical Building, 1930 Wilshire Boulevard, Los Angeles.

Vice-Speaker of House of Delegates—John H. Graves, 977 Valencia Street, San Francisco.

Chairman of Council—T. Henshaw Kelly, 830 Medico-Dental Building, 490 Post Street, San Francisco.

Chairman of Executive Committee—Karl L. Schaupp, 530 Medico-Dental Building, 490 Post Street, San Francisco.

Chairman of the Committee on Public Relations—Charles A. Dukes, 601 Wakefield Building, 426 Seventeenth Street, Oakland.

Secretary-Treasurer—Emma W. Pope, Four Fifty Sutter Street, Room 2004, San Francisco.

Editor—George H. Kress, 945 Roosevelt Building, 727 West Seventh Street, Los Angeles.

General Counsel—Hartley F. Peart, Room 1800, 111 Sutter Street, San Francisco.

Associate General Counsel—Hubert T. Morrow, Van Nuys Building, 210 West Seventh Street, Los Angeles

Councilors

District Councilors

First District—Imperial, Orange, Riverside, and San Diego Counties, W. W. Roblee (1935), 202 Mission Inn Rotonda, Riverside.

Second District—Los Angeles County, Carl R. Howson (1936), 711 Merritt Building, 307 West Eighth Street, Los Angeles.

Third District—Kern, San Bernardino, San Luis Obispo, Santa Barbara and Ventura Counties, Henry J. Ullmann (1934), 1520 Chapala Street, Santa Barbara.

Fourth District—Calaveras, Fresno, Inyo, Kings, Madera, Mariposa, Merced, Mono, San Joaquin, Stanislaus, Tulare and Tuolumne Counties, Fred R. DeLappe (1935), 218 Beaty Building, 1024 J Street, Modesto.

Fifth District—Monterey, San Benito, San Mateo, Santa Clara and Santa Cruz Counties, Alfred L. Phillips (1936), Farmers and Merchants Bank Building, Santa Cruz.

Sixth District—San Francisco County, Karl L. Schaupp (1934), 530 Medico-Dental Building, 490 Post Street, San Francisco.

Seventh District—Alameda and Contra Costa Counties, Oliver D. Hamlin (1935), Federal Realty Building, Oakland.

Eighth District—Alpine, Amador, Butte, Colusa, El Dorado, Glenn, Lassen, Modoc, Nevada, Placer, Plumas, Sacramento, Shasta, Sierra, Sutter, Tehama, Yolo, and Yuba Counties, C. E. Schoff (1936), 322 Medico-Dental Building, 1127 Eleventh Street, Sacramento.

Ninth District—Del Norte, Humboldt, Lake, Marin, Mendocino, Napa, Siskiyou, Solano, Sonoma and Trinity Counties, Henry S. Rogers (1934), Petaluma.

Councilors-at-Large

George G. Hunter (1935), 910 Pacific Mutual Building, 523 West Sixth Street, Los Angeles.

C. O. Tanner (1936), 3255 Fourth Street, San Diego.

William H. Kiger (1934), 911 Wilshire Medical Building, 1930 Wilshire Boulevard, Los Angeles.

Morton R. Gibbons (1935), Union Square Building, 350 Post Street, San Francisco.

T. Henshaw Kelly (1936), 830 Medico-Dental Building, 490 Post Street, San Francisco.

Junius B. Harris (1934), Medico-Dental Building, 1127 Eleventh Street, Sacramento.

Standing Committees

Executive Committee

The President, the President-elect, the Speaker of the House of Delegates, the Chairman of the Council, the Chairman of the Auditing Committee, the Chairman of the Committee on Public Relations, the Secretary-Treasurer and the Editor. (Karl L. Schaupp, chairman; Emma W. Pope, secretary.)

Auditing Committee

O. D. Hamlin	Oakland	1933
Morton R. Gibbons	San Francisco	1933
Karl L. Schaupp (Chairman)	San Francisco	1933

Committee on Associated Societies and Technical Groups

R. Manning Clarke (Chairman)	Los Angeles	1934
Clifford Sweet	Oakland	1935
William H. Geistweit	San Diego	1936

Committee on Extension Lectures

Robert T. Legge (Chairman)	Berkeley	1934
James F. Churchill	San Diego	1935
J. Homer Woolsey	San Francisco	1936

Secretary ex officio

Committee on Health and Public Instruction

Langley Porter	San Francisco	1934
Fred B. Clarke (Chairman)	Long Beach	1935
W. R. P. Clark	San Francisco	1936

Committee on History and Obituaries

George D. Lyman	San Francisco	1934
Charles D. Ball (Chairman)	Santa Ana	1935
J. Marion Read	San Francisco	1936

Secretary ex officio
Editor ex officio

Committee on Hospitals, Dispensaries and Clinics

Karl L. Schaupp	San Francisco	1934
John C. Ruddock	Los Angeles	1935
Daniel Crosby (Chairman)	Oakland	1936

Committee on Industrial Practice

Harry E. Zaiser	Orange	1934
Morton R. Gibbons (Chairman)	San Francisco	1935
Mott H. Arnold	San Diego	1936

Committee on Medical Defense

Henry Snure, Sr. (Chairman)	Los Angeles	1934
George G. Reinle	Oakland	1935
Fred R. De Lappe	Modesto	1936

Committee on Medical Economics

Willard Stone	Pasadena	1934
John H. Graves (Chairman)	San Francisco	1935
William R. Molony, Sr.	Los Angeles	1936

Committee on Medical Education and Medical Institutions

H. A. L. Ryfkogel	San Francisco	1934
George Dock (Chairman)	Pasadena	1935
George G. Hunter	Los Angeles	1936

Committee on Membership and Organization

LeRoy Brooks	San Francisco	1934
Harry H. Wilson (Chairman)	Los Angeles	1935
Dewey R. Powell	Stockton	1936

Secretary ex officio

Committee on Publications

Percy T. Magan (Chairman)	Los Angeles	1934
Ruggles A. Cushman	Talmage	1935
Frederick F. Gundrum	Sacramento	1936

Secretary ex officio
Editor ex officio

Committee on Public Policy and Legislation

E. T. Remmen	Glendale	1934
Junius B. Harris (Chairman)	Sacramento	1935
Fred R. De Lappe	Modesto	1936

President ex officio
President-elect ex officio

Committee on Scientific Work

Lemuel P. Adams	Oakland	1934
J. Homer Woolsey	San Francisco	1935
F. M. Pottenger	Monrovia	1936

H. O. Koefod, Secretary of Section on General Medicine, ex officio
Edwin M. Taylor, Secretary of Section on General Surgery, ex officio
Emma W. Pope (Chairman), ex officio

Committee on Arrangements (Annual Session 1934)

William W. Roblee (Chairman)	Riverside	1934
Hervey S. Faris	Riverside	1934
G. Wayland Coon	Riverside	1934
Bon O. Adams	Riverside	1934
Arthur W. Walker	Riverside	1934

Committee on Public Relations

The Committee on Public Relations consists of the chairmen of the following standing committees and of certain general officers of the Association, all serving ex officio. The chairman of the committee is Dr. Charles A. Dukes, the secretary is Dr. Emma W. Pope. The director of the Department of Public Relations is Dr. Walter M. Dickie.

Fred B. Clarke	Chair., Com. on Health and Public Instruction
Daniel Crosby	Chair., Com. on Hospitals, Dispensaries, Clinics
Morton R. Gibbons	Chair., Com. on Industrial Practice
Harry H. Wilson	Chair., Com. on Membership and Organization
John H. Graves	Chair., Com. on Medical Economics
Junius B. Harris	Chair., Com. on Public Policy and Legislation
Charles A. Dukes	Chair., Cancer Commission
George G. Reinle	President of the California Medical Association
Clarence G. Toland	President-elect
Emma W. Pope	Secretary-Treasurer

Communications for the Public Relations Department should be addressed to the Director, Dr. Walter M. Dickie, Room 2039, 450 Sutter Street, San Francisco.

Cancer Commission

Charles A. Dukes (Chairman)	Oakland	1934
Lyell C. Kinney (Vice-Chairman)	San Diego	1934
Alson R. Kilgore (Secretary)	San Francisco	1934
*William Ophüls	San Francisco	1935
Orville Meland (Sec'y for Southern Section)	Los Angeles	1935
A. Herman Zeiler	Los Angeles	1935
Harold Brunn	San Francisco	1936
Henry J. Ullmann	Santa Barbara	1936
Clarence G. Toland	Los Angeles	1936

Communications for the Cancer Commission should be addressed to the Secretary, A. R. Kilgore, M. D., Room 2039, 450 Sutter Street, San Francisco.

---

* Deceased.

(Roster lists continued on advertising page 4)

SPECIAL MOTORCYCLE SERVICE

HOURS: Week Days, 8 A. M. to 9 P. M. . . . . Sundays, 9-1, 6-8

Special attention given all telephone prescriptions. Four stores will furnish special motorcycle service delivery to any part of the city at any hour of the day or evening.

Broemmel's Prescription Pharmacies

ESTABLISHED 1868

SERUMS ◆ VACCINES ◆ ANTITOXINS

Third Floor Medico-Dental Bldg.
Post and Mason Streets
Telephones: GArfield 0265-0266

California and Steiner Streets
Telephones: WEst 0558-0559
Fourth Floor, 450 Sutter
Telephones: GArfield 4486-4487

Second Floor, Fitzhugh Bldg.
Post and Powell Streets
Telephones: GArfield 4417-4418-4419-4420-4421-4422

LAS ENCINAS - - - PASADENA, CALIF.

A SANITARIUM FOR THE TREATMENT OF GENERAL AND NERVOUS DISEASES

Board of Directors: George Dock, M. D., *President;* W. Jarvis Barlow, M. D.; Stephen Smith, M. D.; Charles W. Thompson, M. D.; George Hunter, M. D.

Address: STEPHEN SMITH, M.D., F.A.C.P., or CHARLES W. THOMPSON, M.D., F.A.C.P., Medical Directors
LAS ENCINAS, PASADENA, CALIFORNIA

Army Preventive for Poison Oak.—The following outline of a method to prevent poisoning by poison oak has been issued by the headquarters of the Ninth Corps Area, United States Army, San Francisco. It is said to have been used successfully by engineering students of the University of California while on excursions into the field.

"First bathe all exposed parts in 10 per cent ammonia water—that is, hands, arms, face, neck, and ears. When applying to the face hold your breath while you put it on and wipe it off with a towel.

"Then apply liberally to the same area a saturated solution of hyposulphite of soda. Allow this to dry on the skin without wiping. This solution is nothing more or less than the ordinary 'hypo' used in developing photographs. It forms a very thin but tough and resilient coating on the skin, which prevents the fine oil from the poison-oak plant from penetrating into the pores.

"Once infected with poison oak all the remedies on the market are worthless except for relief."—*Weekly Bulletin, California Department of Public Health.*

Diphtheria Death Rate Rises.—The diphtheria case rate for California was lower in 1932, but the death rate for the disease was higher. The following table indicates the trend in diphtheria control during the past five years:

Year	Cases	Case Rate*	Deaths	Death Rate*	Fatality Rate
1928	4,741	89.6	273	5.2	5.76
1929	3,022	54.8	185	3.4	6.12
1930	3,071	53.6	193	3.4	6.28
1931	3,421	57.4	175	2.9	5.11
1932	3,209	52.0	206	3.3	6.4

---

* Per 100,000 population.

—*Weekly Bulletin, California State Department of Public Health.*

Dewar & Hare Electric Co.

Manufacturers and Distributors

X-Ray and Physiotherapy Equipment

and

Aurora X-Ray Corporation Products

X-Ray Apparatus ◆ Quartz Ultra Violet Lamps
Infra Red Lamps ◆ Accessories
"Thermotax" Diathermy ◆ "Electrotax" Sine Wave

386 SEVENTEENTH STREET, *near Franklin St.*
Telephone GLencourt 9273 Oakland, California

A San Francisco Organization

Shumate Drug Company

DISPENSING CHEMISTS

Catering to the Medical Profession
Since 1890

Officers of Scientific Sections of California Medical Association

Anesthesiology

Chairman, John Miller Wilson, 605 Professional Building, Pasadena.
Secretary, Ethel Righetti, 319 Walnut Street, San Francisco.

Dermatology and Syphilology

Chairman, Louis F. X. Wilhelm, 410 California Medical Building, 1401 South Hope Street, Los Angeles.
Vice-Chairman, C. E. Schoff, 322 Medico-Dental Building, 1127 Eleventh Street, Sacramento.
Secretary, Philip K. Allen, 314 Medico-Dental Building, 233 A Street, San Diego.

Eye, Ear, Nose and Throat

Chairman, J. Roy Jones, 2138 Third Avenue, Sacramento.
Vice-Chairman, Harold A. Fletcher, 1440 Medico-Dental Building, 490 Post Street, San Francisco.
Secretary, Samuel A. Durr, 1304 Medico-Dental Building, 233 A Street, San Diego.

General Medicine

Chairman, Fred H. Kruse, 916 Fitzhugh Building, 384 Post Street, San Francisco.
Secretary, Hilmar O. Koefod, 1421 State Street, Santa Barbara.

General Surgery

Chairman, Joseph K. Swindt, 546 Investment Building, Pomona.
Secretary, Edwin M. Taylor, 230 Grand Avenue, Oakland.
Assistant Secretary, William P. Kroger, 902 Wilshire Medical Building, 1930 Wilshire Boulevard, Los Angeles.

Industrial Medicine and Surgery

Chairman, John J. Loutzenheiser, Union Square Building, 350 Post Street, San Francisco.
Secretary, J. Minton Meherin, 507 Union Square Building, 350 Post Street, San Francisco.

Neuropsychiatry

Chairman, Clifford W. Mack, Livermore Sanitarium, Livermore.
Vice-Chairman, Helen Hopkins, 925 Pacific Mutual Building, 523 W. Sixth Street, Los Angeles.
Secretary, H. Douglas Eaton, 811 Medical Office Building, 1136 West Sixth Street, Los Angeles.

Obstetrics and Gynecology

Chairman, Alice F. Maxwell, University of California Hospital, Fourth and Parnassus Avenues, San Francisco.
Vice-Chairman, Emil F. Krahulik, 1021 Taft Building, 1680 N. Vine Street, Hollywood.
Secretary, H. A. Stephenson, 521 Medico-Dental Building, 490 Post Street, San Francisco.

Pathology and Bacteriology

Chairman, George D. Maner, Wilshire Medical Building, 1930 Wilshire Boulevard, Los Angeles.
Secretary, Emil Bogen, Olive View Sanitarium, Olive View.
Assistant Secretary, Zera E. Bolin, 450 Sutter Street, San Francisco.

Pediatrics

Chairman, Francis S. Smyth, University of California Hospital, Fourth and Parnassus Avenues, San Francisco.
Secretary, Henry E. Stafford, 242 Moss Avenue, Oakland.
Assistant Secretary, Sam J. McClendon, 2001 Fourth Street, San Diego.

Radiology

Chairman, Robert S. Stone, University of California Hospital, Fourth and Parnassus Avenues, San Francisco.
Secretary, Kenneth S. Davis, St. Vincent's Hospital, 2131 Ocean View Boulevard, Los Angeles.

Urology

Chairman, Lewis Michelson, 434 Medico-Dental Building, 490 Post Street, San Francisco.
Secretary, George F. Schenck, 308 Wilshire Medical Building, 1930 Wilshire Boulevard, Los Angeles.

Officers of County Medical Associations

Alameda County Medical Association
2404 Broadway, Oakland

President, Dexter N. Richards, 400 29th St., Oakland.
Secretary, Gertrude Moore, 2404 Broadway, Oakland.

Butte County Medical Society

President, Dan H. Moulton, Box 520, Chico.
Secretary, J. O. Chiapella, Chiapella Building, Chico.

Contra Costa County Medical Society

President, L. H. Fraser, American Trust Bldg., Richmond.
Secretary, Clara H. Spalding, 331 Eighth Street, Richmond.

Fresno County Medical Society

President, Elmer J. Schmidt, 612 T. W. Patterson Building, Fresno.
Secretary, Neil J. Dau, 1111 Fulton St., Fresno.

Humboldt County Medical Society

President, Lane Falk, 507 F Street, Eureka.
Secretary, L. A. Wing, Eureka.

Imperial County Medical Society

President, John L. Parker, Brawley.
Secretary, George C. Holleran, Brawley.

Kern County Medical Society

President, Perryman F. Page, Box 426, Taft.
Secretary, Seymour Strongin, San Joaquin Hospital, Bakersfield.

Kings County Medical Society

President,
Secretary, Benjamin H. Pratt, First National Bank Building, Lemoore.

Lassen-Plumas County Medical Society

President, Bert J. Lasswell, Quincy.
Secretary, C. I. Burnett, Knoch Building, Susanville.

Los Angeles County Medical Association
1925 Wilshire Boulevard

President, Charles T. Sturgeon, 1930 Wilshire Boulevard, Los Angeles.
Secretary, Harry H. Wilson, 1925 Wilshire Boulevard, Los Angeles.

Marin County Medical Society

President, John H. Kuser, Cheda Building, San Rafael.
Secretary, Carl W. Clark, Albert Building, San Rafael.

Mendocino County Medical Society

President, R. A. Babcock, Willits.
Secretary, Paul J. Bowman, Fort Bragg.

Merced County Medical Society

President, B. E. McDowell, Bank of Italy Building, Merced.
Secretary, Fred O. Lien, Shaffer Building, Merced.

Monterey County Medical Society

President, R. M. Fortier, 2 McDougall Building, Salinas.
Secretary, John A. Merrill, 308 Spazier Building, Monterey.

Napa County Medical Society

President, C. A. Johnson, Gordon Building, Napa.
Secretary, M. M. Booth, 1379 Main Street, St. Helena.

Orange County Medical Society

President, William S. Wallace, 207 W. Chapman Street, Orange.
Secretary, Waldo S. Wehrly, 620 N. Main Street, Santa Ana.

Placer County Medical Society

President, L. B. Barnes, Newcastle.
Secretary, R. A. Peers, Colfax.

Riverside County Medical Society

President, Hervey S. Farris, 3616 Main Street, Riverside.
Secretary, T. A. Card, Glenwood Block, Riverside.

Sacramento Society for Medical Improvement

President, George A. Briggs, 409 Farmers and Mechanics Bank Bldg., Sacramento.
Secretary, Frank W. Lee, 510 Physicians Building, 1027 Tenth Street, Sacramento.

San Benito County Medical Society

President, L. C. Hull, Hollister.
Secretary, L. E. Smith, Hollister.

San Bernardino County Medical Society

President, Fred B. Moor, Loma Linda.
Secretary, E. J. Eytinge, 47 East Vine Street, Redlands.

San Diego County Medical Society
Fourteenth Floor, Medico-Dental Building, 233 A Street, San Diego

President, Clair L. Stealy, 2001 Fourth St., San Diego.
Secretary, William H. Geistweit, Jr., 810 Medico-Dental Building, 233 A Street, San Diego.

San Francisco County Medical Society
2180 Washington Street, San Francisco

President, Karl L. Schaupp, 530 Medico-Dental Bldg., 490 Post St., San Francisco.
Secretary, Mary Jones-Mentzer, 2180 Washington St., San Francisco.

San Joaquin County Medical Society

President, J. F. Doughty, 231 W. 11th St., Tracy.
Secretary, C. A. Broaddus, 907 Medico-Dental Building, 242 North Sutter Street, Stockton.

San Luis Obispo County Medical Society

President, W. D. Butler, 1114 Chorro Street, San Luis Obispo.
Secretary, Allen F. Gillihan, San Luis Obispo.

San Mateo County Medical Society

President, Benjamin H. Page, 231 Second Avenue, San Mateo.
Secretary, H. H. Ray, 23 Second Avenue, San Mateo.

Santa Barbara County Medical Society

President, M. J. Geyman, 1520 Chapala Street, Santa Barbara.
Secretary, William H. Eaton, Health Department, Santa Barbara.

Santa Clara County Medical Society

President, George L. Barry, 700 Medico-Dental Building, San Jose.
Secretary, E. O. G. Schmitt, 608 Medico-Dental Building, San Jose.

Santa Cruz County Medical Society

President, O. C. Marshall, New Register Building, Watsonville.
Secretary, Samuel B. Randall, Farmers and Merchants Natl. Bank Bldg., Santa Cruz.

Shasta County Medical Society

President, Earnest Dozier, Masonic Building, Redding.
Secretary, F. H. Olberg. Craddock Building, Redding.

Siskiyou County Medical Society

President, W. E. Hart, Yreka.
Secretary, Joseph Langer, Hilt.

Solano County Medical Society

President, Philip B. Fry, Benicia.
Secretary, John W. Green, 427 Sacramento Street, Vallejo.

Sonoma County Medical Society

President, Mark L. Lewis, 41 Main Street, Petaluma.
Secretary, W. C. Shipley, 206 Rosenberg Building, Santa Rosa.

Stanislaus County Medical Society

President, Donald L. Robertson, 1003 12th Street, Modesto.
Secretary, J. A. Porter, 209 Beaty Bldg., 1024 J St., Modesto.

Tehama County Medical Society

President, F. L. Doane, Red Bluff.
Secretary, F. J. Bailey, Red Bluff.

Tulare County Medical Society

President, Frank Kohn, County Hospital, Tulare.
Secretary, Karl F. Weiss, Security First National Bank Building, Visalia.

Ventura County Medical Society

President, F. Royal Hendricks, 620 E. Main St., Ventura.
Secretary, Wm. Felberbaum, 134 N. 10th St., Santa Paula.

Yolo-Colusa-Glenn County Medical Society

President, Oscar C. Railsback, Woodland Clinic, Woodland.
Secretary, G. W. Desrosier, Colusa.

Yuba-Sutter County Medical Society

President, T. E. Larner, I. O. O. F. Building, Marysville.
Secretary, Fred W. Didier, Wheatland.

(Roster lists continued on advertising page 6)

Would a Mother choose as you would?

WHEN you advise Evaporated Milk for baby's bottle, you have in mind certain high standards of Evaporated Milk quality.

But what mother can apply all these standards? She must choose from a purely layman's point of view.

In this important decision, how much better to have *your* advice!

Among the brands of Evaporated Milk that meet the physician's every requirement—in quality, purity, freshness—are those produced by The Borden Company. Careful selection of raw milk and rigid safeguards throughout the process of manufacture guarantee the quality of every Borden brand . . . Borden's Evaporated Milk . . . Pearl . . . Maricopa . . . Oregon . . . St. Charles . . . Silver Cow. All are accepted by the American Medical Association.

Write for compact, simple infant feeding formulary and scientific literature. Address The Borden Company, Dept. 324, 350 Madison Ave., New York, N. Y.

The Borden Company was the first to submit evaporated milk for acceptance by the Committee on Foods of the American Medical Association. Borden's was the first evaporated milk to receive the seal of acceptance of this Committee.

Borden's

EVAPORATED MILK

Woman's Auxiliary to the California Medical Association

State Auxiliary Officers

President, Mrs. Andrew Mitchell Henderson, 1600 M Street, Sacramento.
President-Elect, Mrs. Philip Schuyler Doane, 855 Oak Knoll Circle, Pasadena.
First Vice-President, Mrs. Paul A. Quaintance, 809 South Orange Drive, Los Angeles.
Second Vice-President, Mrs. Thomas Clark, 40 Ross Circle, Oakland.
Recording Secretary, Mrs. Ruggles A. Cushman, Talmage.
Corresponding Secretary, Mrs. Charles E. Von Geldern, 1325 Fortieth Street, Sacramento.
Treasurer, Mrs. F. N. Scatena, 1400 Forty-first Street, Sacramento.

Officers of County Auxiliaries

Alameda County — President, Mrs. Charles Dukes, 211 The Uplands, Oakland.

Contra Costa County—President, Mrs. U. S. Abbott, 5490 Barrett Avenue, Richmond.
Los Angeles County — President, Mrs. A. Bennett Cooke, Pasadena.
Mendocino County—Mrs. R. A. Cushman, Talmage.
Napa County—President, Mrs. W. L. Blodget, Calistoga.
Orange County—Mrs. C. S. O'Toole, Anaheim.
Riverside County — Mrs. A. W. Walker, Riverside.
Sacramento County—President, Mrs. Frederick N. Scatena, Sacramento.

San Bernardino County—President, Mrs. C. G. Hilliard, Redlands.

San Diego County—President, Mrs. Charles E. Howard, San Diego.

San Joaquin County—President, Mrs. P. B. Gallegos, Stockton.

Santa Barbara County—President, Mrs. R.T. Atsatt, Santa Barbara.

San Luis Obispo County—Mrs. Deon A. Crew, 846 Higuera Street, San Luis Obispo.

Sonoma County—President, Mrs. Henry S. Rogers, Petaluma.

Delegates and Alternates to the American Medical Association

DELEGATES		ALTERNATES
C. A. Dukes, Oakland	(1934)	Edward N. Ewer, Oakland
Carl R. Howson, Los Angeles	(1934)	Edward M. Pallette, Los Angeles
Junius B. Harris, Sacramento	(1934)	John Hunt Shepard, San Jose
William R. Molony, Sr., Los Angeles	(1934)	John C. Ruddock, Los Angeles
Elbridge Best, San Francisco	(1934-1935)	Robert S. Stone, San Francisco
Lyell C. Kinney, San Diego	(1934-1935)	Harry H. Wilson, Los Angeles
Fred B. Clarke, Long Beach	(1934-1935)	A. J. Scott, Los Angeles

Miscellaneous California Medical Organizations

California State Department of Public Health

San Francisco—State Office Building, McAllister and Larkin Streets. UNderhill 8700.
Sacramento—State Office Building, Tenth and L Streets. CApital 2800.
Los Angeles — State Office Building, 217 West First Street. MAdison 1281.
President, John H. Graves, San Francisco.
Director, Giles S. Porter, Los Angeles.

Board of Medical Examiners of the State of California

San Francisco, Rm. 512, 450 McAllister St.
Los Angeles, 812 Associated Realty Building
510 West Sixth Street

Sacramento, 420 State Office Building
President, P. T. Phillips, Santa Cruz.
Secretary, C .B. Pinkham, Room 512, 450 McAllister Street, San Francisco.

Southern California Medical Association

President, Bon O. Adams, Riverside.
Secretary, Robert W. Langley, 1002 Wilshire Medical Building, 1930 Wilshire Boulevard, Los Angeles.

California Northern District Medical Society

President, D. Schuyler Pulford, California State Life Building, Sacramento.
Secretary, Edward S. Babcock, 820 Medico-Dental Building, 1127 Eleventh Street, Sacramento.

Pacific Roentgen Club

Chairman, Lowell S. Goin, 1930 Wilshire Boulevard, Los Angeles.
Secretary, L. H. Garland, 450 Sutter Street, San Francisco.

Better Health Foundation

President, Reginald Knight Smith, 490 Post Street, San Francisco.
Chairman, Executive Committee, Walter B. Coffey, 65 Market Street, San Francisco.
Treasurer, John Gallwey, 1195 Bush Street, San Francisco.
Secretary, Celestine J. Sullivan, 490 Post Street, San Francisco.

Nevada State Medical Association

O. HOVENDEN, McGill	President
D. A. SMITH, Mina	President-elect
J. N. VAN METER, Las Vegas	First Vice-President
FLEET H. HARRISON, Minden	Second Vice-President
HORACE J. BROWN, Reno	Secretary-Treasurer
HORACE J. BROWN, Reno	Delegate
E. E. HAMER, Carson City	Alternate

Hospitals and Sanatoriums

The Institutions here listed have announcements in this issue of CALIFORNIA AND WESTERN MEDICINE. For Index, see advertising page 8.

ALEXANDER SANITARIUM
Nervous and Mild Mental Diseases
Belmont, California

CALIFORNIA SANATORIUM
For Treatment of Tuberculosis
Redwood City, California

CANYON SANATORIUM
For the Treatment of Tuberculosis
Redwood City, California

COLFAX SCHOOL FOR THE TUBERCULOUS
For the Treatment of Tuberculosis
Colfax, California

COMPTON SANATORIUM AND LAS CAMPANAS HOSPITAL, COMPTON
Neuropsychiatric and General

DANTE SANATORIUM
Limited General Hospital
Van Ness and Broadway, San Francisco

FRANKLIN HOSPITAL
Limited General Hospital
Fourteenth and Noe Streets, San Francisco

FRENCH HOSPITAL
General Hospital
Geary at Fifth Avenue, San Francisco

GREENS' EYE HOSPITAL
Consultation, Diagnosis and Treatment of Diseases of the Eye
Bush and Octavia Streets, San Francisco

THE GREER HOME, Inc.
Convalescent Home
6000 Fulton Street, San Francisco

LAS ENCINAS SANITARIUM
Nervous and General Diseases
Las Encinas, Pasadena, California

LIVERMORE SANITARIUM
Nervous and General Diseases
Livermore, California

OAKS SANITARIUM
For Treatment of Tuberculosis
Los Gatos, California

POTTENGER SANATORIUM AND CLINIC
For the Treatment of Tuberculosis
Monrovia, California

ST. CHARLES SANITARIUM
Mental and Nervous, Alcoholic and Drug Addictions
1500 Page Street, San Francisco, California

SAINT FRANCIS HOSPITAL
Limited General Hospital
Bush and Hyde Streets, San Francisco

ST. LUKE'S HOSPITAL
Limited General Hospital
27th and Valencia Streets, San Francisco

ST. MARY'S HOSPITAL
General Hospital
2200 Hayes Street, San Francisco

SOUTHERN SIERRAS SANATORIUM
Scientific Treatment of Tuberculosis
Banning, California

Exclusively Engaged
in providing
Professional Protection

Thirty-four Years
of
Specialized
Service

The Medical Protective Company
of Fort Wayne, Ind.
WHEATON • ILLINOIS

ALPHABETICAL LIST OF ADVERTISERS

Members of the California Medical Association can aid their Journal and the firms who advertise therein, by coöperation as indicated in the footnote on this page

PAGE

Alexander Sanitarium 38
Approved Clinical Laboratories 4 Cover

Barry Co., The James H. 20
Bausch & Lomb Optical Co. 34
Borden Co., The 5
Broemmel's Prescription Pharmacies 3
Bush Electric Corporation 1

California Lima Bean Growers' Association 26
California Sanatorium 31
Calso Water Co. 30
Canyon Sanitarium 35
Certified Laboratory Products 37
Chesterfield Cigarettes 27
Chicago Eye, Ear, Nose and Throat Hospital 9
Children's Hospital, Physiotherapy Course 9
Classified Advertisements 10
Cocomalt 29
Colfax School for the Tuberculous 40
Compton Sanitarium and Las Campanas Hospital 24
Cutter Laboratory 4 Cover

Dante Sanatorium 14
Davis Co., R. B. 29
Dewar & Hare Electric Co. 3
Diederich Optical Co., Inc. 28

PAGE

Doctors' Business Bureau 34
Dry Milk Co., The 15

Four-Fifty Sutter 30
Franklin Hospital 22
French Hospital 28

Golden State Co., Ltd. 19
Greens' Eye Hospital 2 Cover
Greer Home 11
Guth, C. Rodolph, Clinical Laboratories 10

Hittenberger, C. H. 29
Hospitals and Sanatoriums 6
Hynson, Westcott & Dunning, Inc. 38

La Loma Feliz 9
Las Encinas Sanitarium 3
Lilly & Company, Eli 32
Livermore Sanitarium 25

Mead Johnson & Co. 33
Medical Protective Co., The 7
Merck & Co., Inc. 24
Mulford Biological Laboratories 13

New York Polyclinic Medical School and Hospital 9
Oaks Sanitarium, The 12
Officers of the California Medical Association 2-4

PAGE

Officers of Miscellaneous Medical Associations 6

Parke, Davis & Co. 16
Park Sanitarium 26
Postgraduate Instruction 9
Pottenger Sanatorium 17
Physiotherapy Course, Children's Hospital 3

Riggs Optical Company 36

Saint Francis Hospital 9
San Francisco Bank, The 36
Sharp & Dohme 13
Shumate's Prescription Pharmacies 3
Soiland, Albert (Radiological Clinic) 39
Southern Sierras Sanatorium 18
Stacey, J. W., Medical Books 11
Stuart Oxygen Co. 3 Cover
St. Luke's Hospital 38
St. Mary's Hospital 21

Tulane University of Louisiana Graduate School of Medicine 9

Union Square Building 23

Walters Surgical Company 11
Wilson Laboratories, The 39

ON CO-OPERATION WITH ADVERTISERS

California and Western Medicine, the Journal of our Association, in its present form, is made possible in part because of the generous coöperation of firms who believe that its pages can successfully carry a message concerning their products to a desirable group of present and future patrons.

The five thousand and more readers of California and Western Medicine often have occasion to purchase articles advertised in this publication.

Other things being equal, it would seem that reciprocal courtesy and coöperation should lead our members to give preference to those firms who place announcements in our publication.

Coöperation might go even farther than that. When ordering goods from our advertisers, mention California and Western Medicine. By the observance of this rule, a distinct service will be given your Association, its Journal and our advertisers.

A SERVICE AGENCY—FOR READERS

The Journal of the American Medical Association and the A. M. A. Coöperative Medical Advertising Bureau of Chicago maintain a Service Department to answer inquiries from you about pharmaceuticals, surgical instruments and other manufactured products, such as soaps, clothing, automobiles, etc., which you may need in your home, office, sanitarium or hospital.

We invite and urge you to use this Service. It is absolutely *free* to every member of the California and Nevada Associations. The Coöperative Bureau is equipped with catalogues and price lists of manufacturers, and can supply you information by return mail.

Perhaps you want a certain kind of instrument which is not advertised in California and Western Medicine, and do not know where to secure it; or do not know where to obtain some automobile supplies you need. This A. M. A. Service Bureau will give you the information. Whenever possible, the goods will be advertised in our pages; but if they are not, we urge you to write direct to the Coöperative Medical Advertising Bureau, 535 N. Dearborn Street, Chicago, Illinois. California and Western Medicine and the A. M. A. Service Bureau desire to serve *you*.

The New York Polyclinic

MEDICAL SCHOOL AND HOSPITAL

(Organized 1881)

(The Pioneer Post-Graduate Medical Institution in America)

Eye, Ear, Nose and Throat

For information address MEDICAL EXECUTIVE OFFICER: 345 W. 50th St., New York City

---

SAINT FRANCIS HOSPITAL

AND

SCHOOL OF NURSING

A General Hospital With Accommodations for Three Hundred Patients

DIRECTORS

JOHN GALLWEY, M. D.
W. B. COFFEY, M. D.
THOS. E. SHUMATE, M. D.
C. R. BRICCA, M. D.

W. W. WYMORE, M. D.
JOHN H. GRAVES, M. D.
Superintendent, V. W. OLNEY

J. H. O'CONNOR, M. D.
R. K. SMITH, M. D.
H. E. MANWARING
W. H. LINFORTH

Address Communications

SAINT FRANCIS HOSPITAL

Bush and Hyde Streets — *Telephone* PROSPECT 7600 — San Francisco

---

La Loma Feliz

(HAPPY HILLSIDE)

Residential School for children handicapped by heart disease, asthma and kindred conditions.

Offers consistent medical attention and regular schooling. No tuberculous or mentally retarded children. Situated on a ranch in the foothills near Santa Barbara. Dry equable climate by actual weather bureau observations.

P. O. Box 585
Telephone No. 22349

INA M. RICHTER, M. D.
Director

Mission Canyon Road
Santa Barbara, California

POSTGRADUATE COURSE
For Graduates in Medicine
Eye, Ear, Nose and Throat
A house doctor is appointed July 1st and Jan. 1st

LABORATORY COURSE
For Nurses and Graduates of High School
CLASSES LIMITED TO SIX
X-Ray, Basal Metabolism, Electro-cardiography and Physical Therapy

150 clinical patients daily provide material for classes. Positions with attractive salaries in hospitals and with group doctors await qualified Technicians

For particulars regarding either course write

CHICAGO EYE, EAR, NOSE AND THROAT HOSPITAL, 231 West Washington Street, Chicago, Illinois

---

The Tulane University of Louisiana

Graduate School of Medicine

Approved by the Council on Medical Education of the A. M. A.

POSTGRADUATE instruction offered in all branches of medicine. Courses leading to a higher degree have also been instituted.

For bulletin furnishing detailed information, apply to the . . . .

DEAN

Graduate School of Medicine

1430 Tulane Avenue — New Orleans, La.

PHYSIOTHERAPY COURSE

Children's Hospital • 4614 Sunset Blvd.

LOS ANGELES, CALIFORNIA

Given by the doctors on the staff and the Director of Physiotherapy for graduate nurses and graduates of Physical Education.

SEPTEMBER 11, 1933–SEPTEMBER 7, 1934

Tuition $125

CLASSIFIED ADVERTISEMENTS

Rates for these insertions are $4 for fifty words or less; additional words 5 cents each.

COACHING FOR STATE BOARDS—MEDICAL AND dental. Arthur H. White, M. D., Suite 1005, Flood Building, San Francisco.

THE COLLECTION OF PROFESSIONAL ACCOUNTS. A booklet prepared by a licensed attorney which shows how to make accounts collectible; also, how to obtain security on accounts, and useful collection methods. Will reduce bad debt losses. Price, $1.00. Pacific Publications, Box 340, Riverside, California.

MEDICAL SECRETARY, TEN YEARS' EXPERIENCE, desires position in physician's office, hospital or sanitarium, in California. Elsie V. Shiffer, R. 3, Box 144, Oakland, California. Phone ANdover 4047.

Bismuth Sodium Tartrate
(SEARLE)

● Is supplied in Stabilized Solution, ready to inject, free from objectionable taste or odor, sufficiently fluid soluble to permit prompt absorption, to prevent incapsulation and embolism; high in ionizable bismuth, potent in spirocheticidal action and notably free from deleterious toxic reactions.

Supplied in boxes of 12—2 c.c. ampoules, $3.60. Boxes of 25's, $6.50, and 60 c.c. bottle (serum-type), $6.00.

C. RODOLPH GUTH
BIOLOGICS & THERAPEUTIC SPECIALTIES
WILLIAM H. BANKS, M. D., *Medical Director*
PHONE KEARNY 3644
811 Flood Bldg. San Francisco, Calif.
ASSOCIATED WITH
FRATES & LOVOTTI, PROFESSIONAL PHARMACISTS

Municipal Public Health Administration.—Public health administration involves a wide variety of activities in both rural and urban communities. Problems associated with the administration of public health in cities, however, are more conspicuous because of their concentration within limited areas. Herbert J. Samuels, D. D. S., of Oakland, a public health enthusiast, has placed emphasis upon this subject in the following statement prepared by him:

"Public health is one of the most complex problems of municipal activity and responsibility. Its unprejudiced administration presupposes knowledge of the subject and willingness to administer in the interests of all the people without favor to any special group and with full appreciation of the relationship between benefits and costs."—*Weekly Bulletin, California Department or Public Health.*

Lodi Receives Health Award.—Dr. Carl E. Buck of New York City, field director of the Committee on Administrative Practice of the American Public Health Association, presented, recently, to the city of Lodi a plaque won by that city in the nation-wide health conservation contest recently completed. This contest was sponsored by the United States Chamber of Commerce in coöperation with the American Public Health Association. Lodi won first award among all cities of less than 20,000 population in the United States. The presentation was made in the auditorium of the Lodi Chamber of Commerce.

The data upon which the award was made was prepared under the direction of Dr. J. J. Sippy, director of the San Joaquin Local Health District, under which the public health of Lodi is administered. In making the award, Doctor Buck gave high praise to Doctor Sippy, who, he said, is ranked by the American Public Health Association among the foremost health officers in the United States.

Doctor Buck said, relative to the public health program in Lodi:

"Public health, more than any other achievement, demands teamwork. A well-rounded, well-balanced program is needed. Among special activities, outside of the routine conservation work, for which Lodi was given special credit, were the passage of a new milk ordinance, institution of lunches for school children by the Parent-Teacher Association, the manner in which relief work has been conducted, particularly in regard to proper diet, introduction of growth charts into the school system, establishment of a new crippled children clinic, analysis of ordinances for food control, introduction of a system of transfer of prenatal cases, and the excellence of the report submitted, with all its material intelligently presented. I consider the report one of two or three best submitted in the four years of the contest."—*Weekly Bulletin, California Department of Public Health.*

There is ample evidence that the use of plain, substantial foods taken in moderate amounts is an important factor in preserving the health. It is interesting to note that the general health of the people of the United States as reflected by mortality rates has been maintained at a very high level during the last two and one-half years of unfavorable economic conditions indicative of readjusted dietaries. Specific data on any present ill effects or incipient untoward conditions caused by the depression have not been collected for the country as a whole. In many instances there is no contact by which the families of the unemployed can be followed for a period of time for close medical observation. It is doubtful that extensive worthwhile data on this could be assembled without unwarranted expense. It is quite probable that the present good health conditions are due to several factors, among which may be mentioned the fortunate absence of any serious widespread epidemics, the increased vigilance of public health agencies and the enforced use of plain, wholesome food by a larger portion of the general population. Undoubtedly there have been fewer excesses in the matter of eating, drinking, and other physical pleasures during the past three years (Surgeon General H. S. Cumming).—*Weekly Bulletin, California Department of Public Health.*

BOOK REVIEWS

List of Books Received

BOOKS RECEIVED

The Operative Story of Cleft Palate. By George Morris Dorrance, M. D., F. A. C. S., Professor of Maxillo-Facial Surgery, The Thomas W. Evans Museum and Dental Institute School of Dentistry, University of Pennsylvania; Surgeon to Saint Agnes' Hospital, and to the American Oncologic Hospital, Philadelphia. Assisted by Enayat Shirazy, D. D. S. Cloth. Pp. 564, with 534 illustrations. Price, $6.50 net. Philadelphia and London: W. B. Saunders Company, 1933.

Fractures. By Paul B. Magnuson, M. D., Associate Professor of Surgery, Northwestern University Medical School, Chicago. Cloth. Pp. 466, with 317 illustrations. Price, $5. Philadelphia: J. B. Lippincott Company, 1933.

Medical Relations Under Workmen's Compensation. A Report Prepared by the Bureau of Medical Economics of the American Medical Association. Paper. Pp. 157. Price, 75 cents. Chicago: American Medical Association, 1933.

United States Naval Medical Bulletin. Published Quarterly for the Information of the Medical Department of the Navy. Issued by the Bureau of Medicine and Surgery, Navy Department. Division of Publications, Lieutenant Commander John Harper, Medical Corps, United States Navy, in Charge. Volume XXXI, No. 3. Paper. Pp. 105. Price, 25 cents. Washington: United States Government Printing Office, 1933.

BOOK REVIEWS

The Colon, Rectum, and Anus. By Fred W. Rankin, J. Arnold Bargen, and Louis A. Buie. Pp. 846. Illustrated. Philadelphia and London: W. B. Saunders Company, 1932.

Based on studies made by the authors at the Mayo Clinic, this book on diseases of the colon, rectum, and anus brings together data many of which could hardly be duplicated elsewhere. This is true notably with respect to the data on diverticulitis and those on ulcerative colitis.

Excellent in many respects, this is certainly one of the most comprehensive monographs now available both as to the surgical and as to the medical diseases of the lower part of the gastro-intestinal canal, a feature of special interest being the inclusion of articles on amebiasis, mucous colitis, sprue, pellagra, and melanosis coli.

In a word, it is a valuable reference work, useful alike to the general surgeon and to the specialist. E. G.

Physical Therapeutical Technic. By Frank Butler Granger. Second edition, revised by William D. McFee. Pp. 436. Illustrated. Philadelphia and London: W. B. Saunders Company, 1932. Price, $6.50.

Physicians who wish to inform themselves on the subject of physiotherapy will do well to consult this well planned and clearly written work which makes available a useful, practical summary of modern physical therapeutic procedures. The book fulfills its purpose admirably, as it contains chapters on each of the special technical manipulations, on the requirements of hospital departments devoted to this branch of treatment and on the use of physiotherapy for the relief of various pathologic conditions.

There is also a chapter by Dr. George B. Rice on the treatment of diseases of the ear, nose, and throat by such means. Numerous illustrations, mostly halftones, add greatly to the interest of the text, and the value of the book is further enhanced by the provision of suitable detailed indexes.

Ten Years of Obstetrics and Gynecology in Private Practice. By John Lincoln Rothrock. Pp. 209. Illustrated. New York: P. B. Hoeber, Inc., 1933.

This book is a summing up of the author's private obstetric and gynecologic cases. Although the author has been in practice nearly forty-five years, he has included in his report only those cases treated during the last ten years, so that the report reflects the full maturity of his ideas and judgment. The series comprises 1750 obstetric cases and 1,345 gynecologic cases. The author's purpose in publishing this report was to picture the problems, possibilities and results of private practice as opposed to clinic practice; in this he has succeeded. The book is a very good representation of modern private obstetric and gynecologic practice.

As to particular points: the author states that he does not make complete blood counts, nor have Wassermann tests done on his obstetric patients except when these tests seem particularly indicated. Although no calamities resulted, this does not seem sound practice. These procedures are comparatively inexpensive; moreover, it is especially true that syphilis may exist in women without any history suggestive of its existence. The author is very enthusiastic about the Kielland forceps, and with thorough justification it would appear. He makes a plea for the use of the vectis, an instrument which has undoubtedly been unduly neglected for many years. He advocates the extraperitoneal cesarean section, and has obtained very good results with it. He employs his own individual method of suspending the uterus—a modification of the Alexander operation, stating that the round ligaments are usually well developed and strongly attached at their uterine extremities and attenuated at their peripheral ends, a statement with which all gynecologists will not agree. Good results were obtained. He employs radium, surgery, or a combination of both for

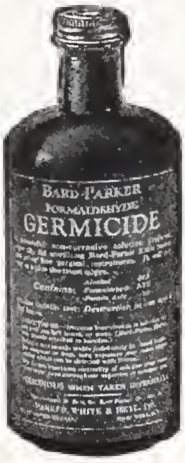
(Continued on Next Page)

NEW - - **BOOKS** - - NEW

Annual Review of Biochemistry, Vol. II . . $5.00
Horsley: Surgery of the Stomach and Duodenum 7.50
Sharp: Neurological Effects of Syphilis . . 2.00
Stephen: Psychoanalysis and Medicine . . 2.50
Weil: Textbook of Neuropathology . . . 5.00

Books gladly sent on approval

J. W. STACEY, INC.
Medical and Scientific Books
GArfield 0838
236-238 Flood Bldg. San Francisco



Physicians'
Surgeons' and
Hospital Supplies

WALTERS
SURGICAL COMPANY

521 Sutter Street
SAN FRANCISCO

GArfield 7995

Specializing in
RECUPERATIVE AND NERVOUS CASES

Hydro-Therapeutic Treatments
Occupational Therapy Department
included in weekly or monthly rates

Attractive location and recreational surroundings with absence of hospital atmosphere. Inspection invited. Only referred cases of qualified physicians accepted.

The GREER HOME, Inc.
Corner 36th Avenue and Fulton Street
SAN FRANCISCO, CALIFORNIA
Telephone EVERGREEN 9645

The Oaks Sanitarium *Los Gatos, California*

A Moderately Priced Institution for the Scientific Treatment of Tuberculosis

FOR PARTICULARS AND BOOKLET ADDRESS

William C. Voorsanger, M. D.
Medical Director

Paul C. Alexander, M. D.
Assistant Medical Director

San Francisco Office: 490 POST STREET

BOOK REVIEWS

(Continued from Preceding Page)

uterine cancer. The results were poor. A goodly number of women with pelvic inflammatory disease were operated upon successfully, but the author does not state his indications. Many other points might be commented upon, but these will serve to give the highlights.

Although it is entertaining for anyone engaged in this branch of medicine to look over the figures presented in a document of this sort, no particular purpose is served. Such a book makes no significant contribution to medical science. The shelves of medical libraries are atrociously cluttered up as it is. If fifty or one hundred years from now someone wished to know what the practice of obstetrics and gynecology was like in 1933, Doctor Rothrock's book might prove a valuable source; aside from this it lacks worthiness. The author unquestionably derived lots of enjoyment from writing this book; furthermore such a compilation is of the utmost value to the person making it. To others it will prove of less value.

D. G. M.

Endocrine Medicine. By William Engelbach. Three volumes and an index volume. Pp. 1795. Illustrated. Springfield: Charles C. Thomas, 1932.

The reviewer has earnestly striven to steer a middle course between hypercritical pettiness and hypocritical adulation.

Over a period of many years Engelbach achieved an exceptionally extensive consulting practice in clinical endocrinology. From its inception he set out painstakingly to examine all his patients with an elaborate clinical and laboratory "set-up," not always necessary in the particular case, but with the deliberate and commendable goal of accumulating a vast array of detailed data. This factual evidence was then to be sifted, catalogued, classified, systematized, summarized, and then compared with the recorded reports of others, and finally preserved in an imposing system of endocrinology. One can but respect and admire this ambition, this plan of action, and the enormous toil its consummation entailed. Has the final result been worthy of this prodigious labor? Perhaps not altogether.

The well-intentioned plan of simplifying the subject for the reader by dividing each endocrinopathy of each ductless gland into the clinical picture manifested in the several age periods of life, and devoting separate sections to each of these, has inevitably lengthened what might have been a more useful one-volume book into three volumes replete with repetitions and redundancies. Moreover, perusal of the work is not aided by a graceful fluent style of expression; indeed, much of it is labored, involved, and at times confusing.

The author has conscientiously pursued a methodical exposition of each endocrinopathy in each age period, the definition, and sectional descriptions of the pathology, physiology, chemistry, symptomatology, diagnosis, prognosis, therapy, and relations to nonendocrine disease and to public health. An excellent feature is the utilization of appropriate case histories together with a remarkable and elaborate collection of photographs, mostly from his own series of over two thousand records. The vast majority of these illustrations are well selected; some of them could just as well have been omitted. The same observation applies to numerous charts, some of which are most interesting and valuable, whereas others are obscure or much ado about little.

The case histories are presented with a praiseworthy but astonishing frankness since the author must have known that much of the therapy he admits to have administered was either worthless or positively contraindicated. One is amazed at the prescribing of a gland extract to a patient whose corresponding gland is described as hyperactive. Why add fuel to the flames?; except that in those days much of the fuel was "all wet" and would not burn anyway. The reviewer feels constrained to make these comments because the work was, after all, largely intended for the student, general practitioner, and specialist desirous of acquiring a practical insight into clinical endocrinology. And now that the newer extracts are biologically standardized and presumably more potent, careless organotherapy is not only foolish but may be dangerous.

No review of Engelbach's work would be fair or comprehensive without an unstinted tribute to his emphasis on the importance of detailed "bone age" studies and proper anthropometric measurements, especially in the recognition and differential diagnosis of infantile, juvenile, and adolescent endocrinopathies. Here his contribution is outstanding and has elements of permanence.

Finally, much commendation must be accorded the publishers. Their share of the work is almost flawless—handsome volumes, fine quality paper, excellent printing, and beautifully reproduced illustrations.

The serious-minded internist and the trained endocrinologist (clinician, chemist, physiologist, etc.) will wish to possess these volumes, for the discriminating reader will find within them much of interest—but for the beginner?

H. L.

For prompt and efficient immunization

Diphtheria Toxoid Mulford

IMMUNITY against diphtheria is produced quickly with Diphtheria Toxoid Mulford (within 6 to 8 weeks instead of 3 to 6 months).

Clinical evidence shows that this protective immunity is developed in 90% to 95% of young children and in 85% to 95% of those over 15 years. In addition, Diphtheria Toxoid Mulford does not contain serum.

It is stable and non-toxic—does not acquire toxicity upon freezing or with age. Its relative freedom from toxicity is such that five human doses cause no symptoms of poisoning in a guinea pig.

Because generally only two doses are required, there is less inconvenience for the patient and a saving of labor for the physician.

Diphtheria Toxoid Mulford is accepted by the Council on Pharmacy and Chemistry of the American Medical Association.

It is supplied in packages of two 1-cc. ampoule-vials (1 immunization); twenty 1-cc. ampoule-vials (10 immunizations); and one 30-cc. ampoule-vial (15 immunizations).

ACCEPTED
AMERICAN
MEDICAL
ASSN.
Council on Pharmacy
and Chemistry

MULFORD BIOLOGICAL LABORATORIES

Sharp & Dohme

PHILADELPHIA BALTIMORE MONTREAL

DANTE SANATORIUM

Known for the High Standard of Cuisine and Service

Broadway and Van Ness Avenue

SAN FRANCISCO CALIFORNIA

Edward A. Trenkle, ***Managing Director***

Telephone **GRaystone 1200**

TWENTY-FIVE YEARS AGO

(Continued from Page 144)

From an article on "Removal of Tonsils Under Local Anesthesia" by E. C. Sewall, M. D., San Francisco.

Where removal is indicated, the tonsil must be extirpated in its entirety; if impossible otherwise, then under a general anesthetic. But I have found in most cases that by employing a local anesthetic by the injection-infiltration method, the tonsils can be separated from the pillar and removed. . . .

From an article on "The Overproduction of Doctors" by H. S. Delamere, M. D., Ferndale.

. . . I refer to the great overproduction of doctors. For some strange reason, no one ever mentions this fountain head of all our troubles. . . .

. . . Unfortunately the physician is compelled to eat, drink, wear clothes and find shelter the same as other people, and as society fails to furnish him with these things free of cost, it is incumbent on him to provide them for himself.

If, as is almost certain, the doctor finds himself in a community where there are more doctors than there are patients, he is soon going to be compelled to figure out a plan by which he can live; hence the resort to so many undignified and unprofessional acts.

. . . We have from three to six physicians where one is needed, and still they come, more and more. Los Angeles County, California, with a population at the last census of 170,298, shows in the register of 1907, 741 doctors instead of 170.

From an article on "Obstetrical Reminiscences" by H. E. W. Barnes, M. D., Santa Ana.

. . . This recital will of necessity be of a personal character, partaking to a degree the nature of "Tales of a Grandfather." The ideal obstetrician should have the strength of Samson, the patience of Job, the wisdom of Solomon, and a knowledge of human nature that was possessed by Hugo, Dickens, and Shakespeare, in addition to a thorough knowledge of the entire subject, and a natural resourcefulness to meet and overcome emergencies that often "come not single spies but in battalions." . . .

From an article on "The Underlying Principles of Anti-Plague Measures" by Rupert Blue, M. D., P. A. Surgeon, U. S.; P. H. and M. H. S., San Francisco.

In a previous paper the technique of a plague campaign was discussed. In this article it is proposed to deal with the reasons for the measures previously indicated.

Fungus Coccidioides—The California Disease.

Since 1892 some eighteen cases of this disease have been reported, and as all but one of them have lived at some time of their lives in the San Joaquin Valley, this has been very appropriately called the California disease. Doctor Kellogg of Bakersfield, Kern County, California, has seen more of these interesting cases than any other one doctor. . . .

Fifth Pan-American Medical Congress.

The fifth Pan-American Medical Congress will be held this year in Guatemala from August 5 to August 10. A large attendance is expected. . . .

International Congress on Tuberculosis.

President Roosevelt has accepted the presidency of the International Congress on Tuberculosis. His letter

(Continued on Page 17)

It's Hot...It's August

Babies are Suffering from Heat and Summer Complaint . . . .

DIARRHEA

Whatever the cause of Diarrhea . . . the water balance must be maintained

It is essential to find a diet that, during the diarrhea, will give sufficient liquid with enough salt to permit a retention of water and provide enough calories to prevent inanition. The purpose of the "transition diet" is to arrest loss of weight, after which a diet is given to increase weight again. *(Révue Française de Pediat., 1930.)*

Adapt the food to the baby—not the baby to the food

Dryco is an excellent "Transitional Diet."

The relation between water, fat and other elements of Dryco may be varied to suit the needs of the weakened digestive organs of the sick baby. Its lowered fat content, its flexibility (Dryco may be given in all degrees of concentrations and modifications) allow of easy regulation of the water to be ingested for a given amount of nutritive elements. *DRYCO is digested and assimilated when other foods fail.*

And because of the added Vitamin D Content Babies Receive Automatic Protection against Rickets, the most common Nutritional Disease of Infancy and Childhood.

PRESCRIBE

DRYCO

ACCEPTED AMERICAN MEDICAL ASSN. Committee on Foods

Made from superior quality milk from which part of the butter fat has been removed, irradiated by the ultraviolet ray, under license by the Wisconsin Alumni Research Foundation (U. S. Patent No. 1,680,818) and then dried by the "Just" Roller Process.

ALL DRYCO IN THE HANDS OF DRUGGISTS IS IRRADIATED

THE DRY MILK COMPANY, INC.
Dept. CW, 205 E. 42nd St., New York, N. Y.

Please send: Acute & Habitual Vomiting in Infants; Diarrhea; Milk Irradiated by the Carbon Arc Lamp (Abs.); The Prevention and Cure of Rickets through Irradiated Milk; Dryco—The Irradiated Milk (Booklet).

In Every Physician's Bag . . .

The many emergencies in which it is urgently needed—traumatic shock, apparent death, anaphylaxis, serum reactions, and asthmatic paroxysms—suggest the wisdom of always keeping a supply of Adrenalin* in the emergency bag.

Many clinicians with wide experience in immunization work inject Adrenalin preceding or with the injection of biologicals or other substances containing foreign proteins, in cases where the patient is suspected of being subject to allergic reaction. This simple precautionary measure may prevent allergic reaction and may be the means of preventing a serious or even fatal protein shock.

A supply of Adrenalin ampoules in your office and in your emergency bag not only provides a means of preventing allergic reactions, but may enable you to administer life-saving medication in an emergency.

Adrenalin Chloride Solution 1:1000 is available in one-ounce bottles and in boxes of one dozen and one hundred 1-cc. ampoules (Ampoule No. 88).

*The Parke-Davis brand of Epinephrine, U. S. P.

PARKE, DAVIS & COMPANY

The World's Largest Makers of
Pharmaceutical and Biological Products

POTTENGER SANATORIUM AND CLINIC

FOR DISEASES OF THE CHEST MONROVIA, CALIFORNIA

Twenty-eight years' experience in meeting the problems of the tuberculous patient.

Located in the foothills of the Sierra Madre mountains, at an elevation of 1000 feet. Sixteen miles east of Los Angeles. on the main line of the Santa Fe. Reached also by the Pacific Electric. Equipped for the scientific treatment of tuberculosis and other diseases of the chest. Beautiful surroundings. Close personal attention. Excellent food.

A clinic for the study and diagnosis of all diseases of the chest, including asthma, lung abscess and bronchiectasis is maintained in connection with the institution.

Weekly rates from $25 up, including medical attention, medicines (except expensive remedies), and general nursing Extra charge for operative measures except pneumothorax.

Los Angeles Office
WILSHIRE MEDICAL BUILDING
1930 Wilshire Boulevard

For particulars address:
POTTENGER SANATORIUM
MONROVIA, CALIFORNIA

TWENTY-FIVE YEARS AGO

(Continued from Page 14)

to Dr. Lawrence F. Flick, chairman of the Committee on Arrangements for the Congress, follows:

The White House, Washington, May 12, 1908.

Sir—It is with great pleasure that I accept the presidency of the "International Congress on Tuberculosis," which is to meet in this city on September 21, 1908, and extend its session to October 12, 1908. . . .

County Societies.

Alameda County.—The program of the evening was conducted by Dr. James Hogan of Vallejo. (Quotations follow.)

. . . "At the June meeting of the Northern California District Medical Society, held in Napa last year, I read a paper on the 'Opsonic Index,' and gave a practical demonstration of Wright's technique.

"At that time I was completely 'opsonized' and hoped that by the time a year had passed I would be able to show tables of indices taken in all the cases I have had under treatment; but I am sorry to say that I have not been able to obtain satisfactory indices in any case and have been compelled to carry on the work from a clinical standpoint, getting marvelous results in some cases and failures in others. . . .

"Some expert bacteriologists claim that it is not possible to get a satisfactory index at all, others claim to do so in every case, and while my experience would put me in the same class with the former, I wish that I had the ability of the latter, as I believe that there is no better way to regulate your dose and space the intervals than by the aid of the opsonic index."

Santa Clara County.—The regular society meeting was held Wednesday evening, June 17, at the St. James Hotel, with fifteen members present. Hon. J. E. Richards, judge of the Superior Court, was the guest of the society, and gave to our members a most interesting and instructive talk on "Expert Evidence." . . . .

BOARD OF MEDICAL EXAMINERS

(Continued from Page 144)

present evidence of graduation from a foreign medical school, also a license to practice issued by the country in which said medical school is located; or in lieu thereof he must complete the fourth year of the regular medical course in an approved United States medical college, or in lieu thereof must complete a two-year internship in a hospital approved by the Council of Medical Education and Hospitals of the American Medical Association.

One of our licentiates recently brought to our attention a press dispatch dated San Francisco, July 13, 1933, printed in a Los Angeles paper, wherein it was indicated that information regarding "754 practicing physicians who are narcotic addicts" had been turned over "to the Medical Association" with the following results: "Seven had their licenses revoked, one doctor was suspended, three doctors were put on probation, and twelve doctors were admonished. . . ." Inasmuch as the California Board of Medical Examiners has been active in its support of the federal and state authorities in narcotic enforcement, we submitted the newspaper statement to Mr. H. J. Anslinger, Commissioner of Narcotics, Washington, D. C., who replied on June 24, 1933, saying that 735 physicians had been reported to various medical examining boards throughout the United States during the period of October, 1930 to December 31, 1932, and he complimented the California Board of Medical Examiners for its coöperation in narcotic enforcement with the statement that "if the same coöperation extended by California were duplicated in all of the states, we could hardly be said to have a problem to solve with reference to continued narcotic abuses by the licensed physician." The annual report of the California Board of Medical Examiners, printed in the back of our

(Continued on Next Page)

Southern Sierras Sanatorium

for
Tuberculosis and Allied Affections
BANNING, CALIFORNIA

SERVICE . . .
A commodity that cannot be satisfactorily pictured or described

EVIDENCE of the quality of service rendered in the *Southern Sierras Sanatorium* is furnished by its sustained reputation for satisfaction.

PROOF of the quality of service rendered can be secured only by an actual sojourn in this sanatorium.

SEND your next patient to this restful retreat, where sympathetic interest awaits him, and we feel confident of your approval.

C. E. ATKINSON, M. D., *Medical Director*

BANNING

90 miles east of Los Angeles on main line of S. P.
Near but not upon the desert (altitude 2,400)
Unsurpassed climate, free from extremes.

Modern equipment and treatment
High ethical standards
Progress reports cheerfully furnished

BOARD OF MEDICAL EXAMINERS

(Continued from Preceding Page)

directory, a copy of which is forwarded to each licentiate, shows that during the year 1932 eleven California licentiates were called before the California board on narcotic charges, of which 6 were revoked, 2 placed on probation, 2 dismissed, and 1 case was carried over to the 1933 meeting of the board. If the printed article is correct, California must have revoked six of the seven revocations listed therein.

"San Jose became the focal point for the interest of more than three thousand chiropractors throughout the state of California today as the first legal skirmish in a battle which has aligned the chiropractors of the state into two opposing camps was fought before Superior Judge William F. James, with Major Leon French of the office of Attorney-General U. S. Webb representing the state. Judge James today heard the first step of a legal procedure by which members of the chiropractic profession seek to obtain a final determination of a problem which has confronted the State Board of Chiropractors since 1922—to interpret Section 7 of the State Chiropractic Act. . . . The question at issue is whether the state law permits licensed chiropractors to practice other than straight chiropractic—limited to spinal adjustments and the like. . . . Eventually, after the case has been heard on its merits, Judge James will render a decision which will be appealed, undoubtedly, to the highest courts for a final interpretation of the mooted law. . . ." (San Jose *News*, June 24, 1933.)

Licentiates are warned against being imposed upon by an individual now traveling in northern California. His scheme consists in representing himself as an engineer or in some other railroad employment, having charge of a trainman afflicted with gall-stone colic en route to the company's hospital and suffering so intensely that it is assertedly necessary for him to have a hypodermic of morphin. The impostor has comprehensive knowledge of railroad affairs, some knowledge of the pathology of gall-stone colic, and invariably states that a "sick order" will be placed in the mail, it being necessary for him to immediately leave with his patient. Later investigation discloses that the whole story is a farce. He has "worked" doctors in Oakland, Stockton, Merced, Lovelock, Nevada, etc. If you hear from this individual, keep him sufficiently interested until the police can be notified.

On June 27, 1933, the District Court of Appeal rendered a decision sustaining the judgment of the Board of Medical Examiners recorded July 10, 1930, revoking the license of Francis J. Bold, M. D., based upon the testimony developed in the de la Cuesta case.

"Superior Judge Emmet H. Wilson this week ruled that the Board of Medical Examiners "had no evidence, ground or charges" to sustain their order in trying to revoke the license of Dr. Eugene J. Rinaldo, who has been practicing medicine and surgery here for the past eleven years on the corner of Beverly Boulevard and Vermont Avenue. . . ." (Los Angeles *News Journal*, June 30, 1933.)

"Dr. Roy F. Ruth, Hollywood physician convicted in a federal court for the prescribing and sale of narcotics, began his six months' sentence in the Ventura County jail yesterday. . . . In sentencing Doctor Ruth, United States District Judge Paul J. McCormick declared: 'The term imposed in this case is not intended solely to punish Doctor Ruth. Other doctors should take notice that if they engage in these practices they will have to pay the penalty.' Doctor Ruth asked for probation, complaining that his conviction will automatically suspend his license as a physician. Judge McCormick replied: 'That is a matter for the state authorities to decide, and it does not concern this court. Furthermore, I will say that it would be to the public's benefit if the state authorities had in other instances suspended the licenses of doctors who violate the state and federal laws'" (Los Angeles *Examiner,* June 28, 1933). (Previous entry, June, 1933.)

Found with photographs of an alleged fraudulent Rush medical diploma and an Illinois license, "Dr." Frederick Albert Woelfli was recently sentenced in St. Helena to 125 days in the county jail for practicing medicine without a license; he is being held pending a trial on an abortion charge. Woelfli stated his only claim to medical education was a few months alleged training in the Crane Sanitariums School of Natural Therapeutics, Elmhurst, Illinois.

"Accused of manslaughter in connection with the 'face peel' death of Mrs. Aileen M. Farnam, a policeman's wife, Dr. I. A. Wallach, physician, Miss Anna Aeberli, nurse, and Christmas E. White, beauty specialist, are to go on trial in the Superior Court of Los Angeles today. . . ." (Los Angeles *Illustrated Daily News,* July 5, 1933).

"A formal complaint charging murder was issued late yesterday by the District Attorney's office against Dr. D. B. Van Wagenen, Ocean Beach, after a coroner's jury earlier in the day had returned a verdict holding the physician responsible for the death of Mrs. Jane Etherington, thirty-one, 2044 Columbia Street. Mrs. Etherington, wife of a sailor, died in a local hospital June 13 from what were said to have been complications following an illegal operation. . . ." (San Diego *Union,* June 21, 1933.)

"Investigation of the sanity of Dr. H. M. Griffith, Pasadena physician, who is charged with assault and intent to kill M. Vilas Hubbard, Pasadena banker, in an attempted gun duel, was ordered today by Judge Walton J. Wood. . . . Hubbard, with whom Doctor Griffith had a controversy over business matters, was wounded three times in the right arm by the physician's bullets, according to police." (Los Angeles *Herald-Express,* June 19, 1933.)

"Dr. Mathew J. Marmillion, 60-year-old negro physician, yesterday was sentenced to serve from ten years to life in San Quentin Prison. A jury in Superior Judge Robert Scott's court found him guilty of second degree murder in connection with the death of Margaret Scott, 18-year-old negro girl, following an asserted illegal operation." (Los Angeles *Examiner,* June 29, 1933.)

Emergency Treatment of Snake Bites.—It would seem probable that the present summer will find more individuals in the mountains and sparsely populated districts of California than have been accustomed to visiting such regions. The forest camps for the unemployed, alone, will take many thousands of young men into the mountainous districts of the state. Because of economic conditions, many families will spend their vacations camping in the open, instead of occupying established camps or summer resorts. In view of these facts, the hazards of exposure to bites from poisonous snakes will be greater than usual. It is believed, therefore, that detailed information relative to

(Continued on Page 21)

No Robot Can Take the Doctor's Place

● Machines are invaluable to modern scientific handling of milk. But, as necessary as the physician at the patient's bedside are skilled men in the exacting work of milk processing.

● Insofar as machinery is concerned, all properly financed milk companies may stand shoulder to shoulder. But, it is in the complete control of the product from cow to consumer, *plus the precise knowledge and skill of its technicians and workers,* that real superiority of achievement is accomplished.

● The Golden State organization has the equipment, to be sure—the best that mechanical genius has contrived. (Not a few of such mechanical advances in the dairy industry have been the invention of Golden State men.) *And,* the Golden State organization has the men. Highly trained, skilled technicians control the operations surrounding Golden State Milk, maintaining not only the standards set by the government, but the even higher standards set by Golden State Company, Ltd.

● A lively interest, thorough scientific training, and long experience are *personal attributes* brought to the work of providing the public with the world's finest food, by the men who direct every step in the processing of Golden State Milk—steps which begin on the dairy farm and end only when the milk reaches the consumer's home.

● Golden State Milk is a superior product. You can prescribe Golden State Milk—you can use it in your own home—with the utmost confidence in its unfailing high quality and dependability.

GOLDEN STATE DAIRY PRODUCTS

Golden State
COMPANY, LTD.
Plants Throughout California
Research Laboratories located at
425 Battery Street, San Francisco
1120 Towne Avenue, Los Angeles

A System for the
Collection of Fees
that has proved its worth

Our bookkeeper fails to find your account settled on our books. Please help him out.

PAST DUE!

☞ *This Account has no doubt escaped your notice. Will you please favor us with a remittance by return mail and oblige?*

THIS ACCOUNT
IS PAST DUE.
PLEASE REMIT.

Regarding Your Past-Due Account

Our records show that several statements and reminders have been sent you regarding the enclosed statement.

If your circumstances have made it impossible for you to pay the amount due, kindly write us promptly to that effect. Our office will then endeavor to extend all possible courtesies.

You appreciate, we are sure, that physicians, like other citizens, must pay their bills promptly. They can only do so, however, when their own clients in turn pay them promptly for such professional services as may have been rendered.

A check to cover your account, which is now considerably overdue, will be appreciated.

Final Notice

In practically all businesses the custom which is generally followed with overdue accounts is to send such to a collecting agency.

Our bookkeeper has nothing in the records of the office to show when you intend to pay the enclosed account. Perhaps the previous statements and reminders may have been overlooked or ignored.

Following the rule of this office, this overdue account will be sent to the collecting agency within ten days if arrangements for its settlement are not made prior to that time.

This collection bureau method is disagreeable to us; and we believe, also to you. By promptly sending your check all this can be avoided.

When an account is sent to the collecting agency that organization takes full charge of it thereafter.

In the September, 1927, issue of California and Western Medicine, page 398, appeared an article relating to the "collection of fees." Following this publication so many orders were received by us for printing the series of gum stickers and notices, we decided to print and stock the series in large quantities.

That we were justified in this decision is evidenced by the fact that thousands of these notices have been used by the medical profession of California. They *get* results. Many users of the system have reordered the series.

You, too, can profit by using the system for your delinquent accounts. They are inexpensive and easy to use.

The prices, including postage, are:

250	$ 6.75
500	9.00
1000	13.50

THE JAMES H. BARRY COMPANY

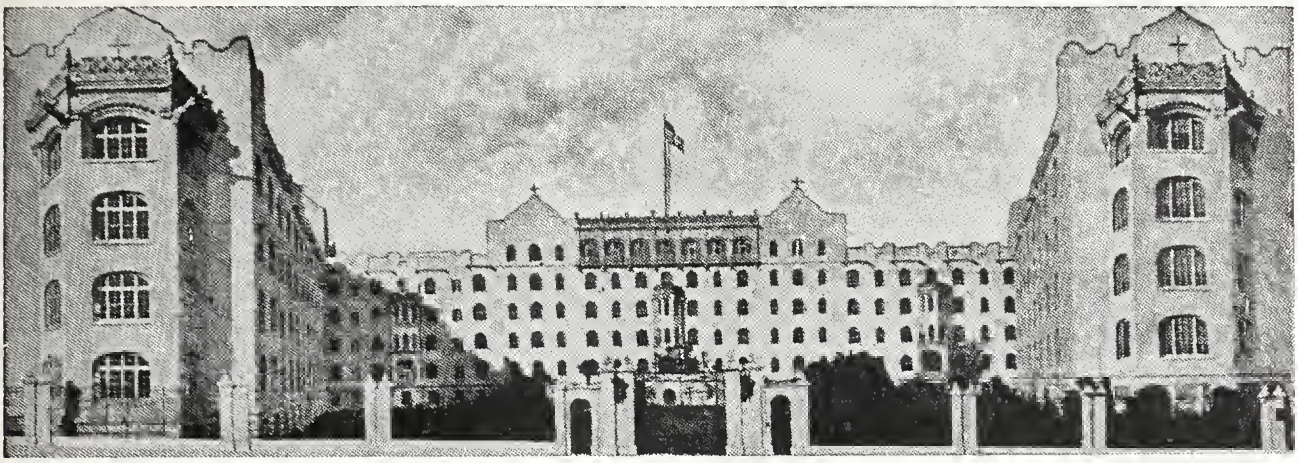
1122–24 Mission Street
San Francisco, California
[*Telephone* MArket 7900]

ST. MARY'S HOSPITAL

2200 Hayes Street
San Francisco

Conducted by Sisters of Mercy

Accredited by the American Medical Association. Open to all members of the California Medical Association. Accredited School of Nursing and Out-Patient Department.



PROFESSIONAL STAFF

Surgery
T. Edward Bailly, Ph.D., F.A.C.S., M.D.
Guido Caglieri, B.Sc., F.R.C.S., F.A.C.S., M.D.
Edward Topham, F.A.C.S., M.D.
James Eaves, M.D.
F. F. Knorp, M.D.
Hubert R. Arnold, F.A.C.S., M.D.
Edmund Butler, F.A.C.S., M.D.
Rodney A. Yoell, M.D.
T. T. Shea, M.D.

Urology
Charles P. Mathe, F.A.C.S., M.D.
George F. Oviedo, M.D.
Thomas E. Gibson, F.A.C.S.,M.D.

Medicine
J. Haderle, M.D.
H. V. Hoffman, M.D.
Stephen Cleary, M.D.
A. Diepenbrock, M.D.
J. H. D. Roger, M.D.
Thomas J. Lennon, M.D.
James M. Sullivan, M.D.

Heart
Harry Spiro, M.D.

Obstetrics
Philip H. Arnot, M.D.
Charles C. Mohun, M.D.

Eye, Ear, Nose and Throat
F. J. S. Conlan, F.A.C.S., M.D.
L. A. Smith, M.D.
J J. Kingwell, M.D.
T. Stanley Burns, M.D.

Orthopedics
Thomas J. Nolan, M.D.
J. J. Loutzenheiser, M.D.

Pediatrics
Randolph G. Flood, F.A.A.P., M.D.

Neurological Surgery
Edmund J. Morrissey, M.D.

Thoracic Surgery
William B. Faulkner, Jr., M.D.

Gastroenterology
Edward Hanlon, M.D.
Frank A. Kinslow, M.D.

Neurology
Milton B. Lennon, M.D.

Dermatology
H. Morrow, M.D.
Harry E. Alderson, M.D.

Pathology
Elmer W. Smith, M.D.

Radium Therapy
Monica Donovan, M.D.

Dentistry
Thomas Morris, D.D.S.
Francis L. Meagher, D.D.S.

(Continued from Page 19)

the prevention and treatment of snake bites may be of timely interest and of possible value in emergencies.

The only poisonous snakes known in California are the Pacific rattler (*Crotalus oreganus*) and the Texas rattler (*Crotalus atrox*). As compared with many eastern and southern states, where copperheads and moccasins are found, California presents little hazard from snake-bite poisoning. No one who is informed and who acts cautiously need have fear of rattlesnake poisoning. Nevertheless, it is true that from thirty to fifty cases of snake-bite poisoning are reported in California during an average summer season. Few of these result fatally, however. Most cases of snake bite occur during the summer and early fall.

It is dangerous to pick up or reach for an object on the ground unless one is assured that a rattlesnake is not in the immediate vicinity. A motion toward an unseen snake will cause the reptile—if one be present—to take defensive action immediately and the bite will be inflicted with the speed of lightning. The fact that most snake bites occur on the hands and feet indicates that stepping or falling in the immediate vicinity of an unseen snake and picking up objects under similar conditions constitute hazards in the contraction of snake bites.

The pain immediately following the injection of the poison is most intense. Other symptoms are swelling, weakness, giddiness, difficult breathing, hemorrhage, weak pulse, nausea and vomiting. Pain and swelling are universal symptoms. Weakness and giddiness are also of common occurrence. The other symptoms are more unusual, but difficult breathing is fairly common.

There has been considerable confusion relative to the best procedure to follow if bitten by a rattlesnake. Dr. Dudley Jackson of San Antonio, Texas, and Colonel M. L. Crimmins, United States Army, retired, have conducted a large number of experiments covering the proper treatment of snake bites, and it is probable that their recommendations may be accepted fully. It is doubtful that any other physicians in the country have seen more cases of snake-bite poisoning than these two men. In addition to their experience in the treatment of cases among human beings, they have also conducted extensive experiments upon dogs in order to formulate definite rules for the first-aid treatment of snake bite.

Doctor Jackson recommends that in case of rattlesnake bite a tourniquet be applied to increase the venous congestion and assist in washing out the poison. A cross-cut incision, one-fourth by one-fourth inches, should be made over each fang mark, or, preferably, to connect the two fang punctures. Suction should be applied for at least half an hour. If this is done within an hour from the time a person is bitten, very little additional treatment is necesary. If the swelling should extend, however, it is necessary that more incisions be made at the top of the swelling and suction applied over such incisions. These should be about one-eighth of an inch wide and one-fourth of an inch deep and should not be confined to the immediate site of the injury. The most dangerous fluid is farthest away from the wound. Its absorption must be prevented, as it is the source of the systemic poisoning.

Doctor Jackson stresses the importance of colonic irrigations of salt and soda solutions, which should be repeated about every four hours. It is important that medical treatment be secured as soon as possible.

If anticrotalus serum is available, it should be applied. Doctor Jackson states, however, that the serum alone cannot be relied upon in the treatment of bites by rattlesnakes. If it is depended upon entirely and suction is not used, fatalities will result. It is more successful to withdraw the poison than it is to allow it to be absorbed and then attempt to neutralize it within the body. Serums should be injected to neu-

(Continued on Next Page)

FRANKLIN HOSPITAL 14th and Noe Streets

BEAUTIFULLY located in a scenic park—Rooms large and sunny—Fine Cuisine—Unsurpassed Operating, X-Ray and Maternity Departments.

⁂

Training School for Nurses

⁂

For further information
Address
FRANKLIN HOSPITAL
San Francisco

(Continued from Preceding Page)

tralize the poison that may be present in an uncombined form in the blood. The serum must not be relied upon to neutralize the poison which is contained in the swollen tissues at the site of the bite. The absorption of the poison within this area is constant and the serum can only neutralize the venom that may be circulating in the blood.

Permanganate of potash in a weak solution will not destroy rattlesnake venom even in a test-tube and neither strong solutions nor the pure crystals will destroy the venom after it has been injected into an animal's body. It will oxidize venom in a test-tube when a 1:300 solution is used, but it will not destroy it in the body in the presence of blood and lymph. Even pure crystals of the drug, in Doctor Jackson's experience, show no beneficial results in treatment, and it is his opinion that injection of a strong solution of permanganate of potash will only sear the tissues and prevent the normal outpouring of lymph which helps to wash out some of the poison. It is believed, in fact, that the use of permanganate of potash in the treatment of snake bites may do much more harm than good.

It is advisable to release the tourniquet every ten or fifteen minutes for about a minute at a time. Care should be used not to bind the limb too tightly. The sole object of the tourniquet is to delay absorption of the poison into the general circulation, but if it is applied too tightly or is retained for too long a time gangrene may occur, with the resultant destruction of the flesh in the affected area.

Snake venom is harmless in the mouth unless it is inoculated. After applying suction to the wound, however, the saliva should be spat out immediately. Alcohol should not be administered in any form. If stimulation of the heart is necessary, as shown by collapse and weak pulse, a little strong coffee or aromatic spirits of ammonia in the amount of a teaspoonful to a glass of water may be administered. It is essential that the antivenom or serum be of the same type as the snake that bit the patient. Otherwise, its administration is useless.

What Not to Do.—If bitten by a rattlesnake, do not run or get overheated.

Do not take any alcoholic stimulants because circulation increased by alcohol (or by exercise) serves to distribute the poison much more rapidly through the body.

Do not injure the tissues by injecting permanganate of potash, which is known to be of no value as an antidote.

Do not depend upon home remedies or so-called snake-bite cures, for they are of no value.

Do not cauterize the site of the bite with strong acids or caustics.

What to Do.—After making proper incisions at the site of the wound, apply suction and continue for at least half an hour.

Apply a tourniquet above the site of the wound, releasing same every ten or fifteen minutes for about a minute at a time.

If the proper antivenom serum is available, apply it according to directions, but most important of all is to remove as much of the poison as is possible so as to prevent its absorption.

Secure the services of a physician at the earliest possible moment.—*Weekly Bulletin, California Department of Public Health.*

Tuberculosis Death Rate Lower.—The California tuberculosis death rate for 1932 was 81.3 per 100,000 population, as compared with a similar rate of 88.9 for the year 1931. This brings the mortality rate for this disease in California to considerably less than half of what it was in 1915, when the Bureau of Tuberculosis was organized in the State Department of Public Health. The annual decrease in the death rate for this disease has been consistent each year since 1915 with

A Limited Number of Very Desirable Suites Facing Union Square Are Now Available

Exclusively for

Physicians • Surgeons Dentists

Union Square Building

350 Post Street
GArfield 1014

the exception of 1918 and 1922, when intensive outbreaks of influenza determined higher trends in tuberculosis mortality. In 1906 the tuberculosis death rate for California was 225.5 per 100,000 population—more than three times as high as it was in 1932.

There is great variation in the tuberculosis mortality rate in the various counties of the state. The fact that more advanced cases of the disease are imported into the southern end of the state is responsible, largely, for the higher death rates that prevail in some sections of Southern California. Localities in which institutions for the treatment of tuberculosis are located, of course, have higher death rates than those localities which are free of such institutions. It is interesting to note, however, that the tuberculosis death rate for the city of Los Angeles is about the same as that for the city of San Francisco, and the rates for both of these cities are almost identical with the rate for the state as a whole. Most of the cities in Southern California have phenomenally low tuberculosis death rates. The tuberculosis death rate for Pasadena, for example, was but 36.2 per 100,000 population, and the similar rate for Long Beach last year was but 23.6. Many other cities of Los Angeles County have even lower death rates for this disease. Tuberculosis death rates are conspicuously high for the rural districts of most of the counties. County hospitals, state hospitals, and special institutions for the treatment of tuberculosis are great contributing factors in the production of high mortality rates for this disease in the rural areas of the various counties, for the reason that most of these institutions are located outside of incorporated areas. Veterans' hospitals also contribute greatly to high tuberculosis death rates in the counties within which they are located. A survey of tuberculosis statistics for 1932 reveals the fact that most tuberculosis deaths occur in institutions. It would seem, in fact, that many active cases of the disease are not provided with institutional treatment until their fatal termination becomes apparent. It is true, nevertheless, that favorable results are achieved continually in the treatment of cases that are discovered early and placed under proper institutional supervision. It is reasonable to assume, however, that most of the deaths from tuberculosis that occur in county hospitals are in individuals whose death warrants had already been signed at the time they entered these institutions.

It is interesting to note that the percentage of tuberculosis deaths to total deaths is now about the same in Northern California and in Southern California. In 1932, 7.6 per cent of all deaths south of Tehachapi were due to tuberculosis, and in the rest of the state during the same year 7.0 per cent of all deaths within that area were due to tuberculosis. For comparison, it may be stated that during the five-year period 1907-1911 the annual average of tuberculosis deaths in Southern California to total deaths was 19.7 per cent, while during the same period in Northern California the annual average comparison of such deaths to total deaths was 12.8 per cent. This would indicate that tuberculosis, at the present time, does not constitute a special problem in Southern California, as it did twenty-five years ago. Stabilization of population is undoubtedly a factor in bringing about this result. It is true, also, that the intensive action that has been directed toward the control of the disease has played an important part in reducing the tuberculosis death rate in Southern California, as well as in Northern California.

In 1911, 16.6 per cent of all tuberculosis deaths in Southern California were in individuals who had lived in the state for less than one year. In 1932, 8.6 per cent of all such deaths from tuberculosis in Southern California were in individuals who had lived in California for less than one year. It would appear, therefore, that the problems associated with the importation of advanced cases of tuberculosis into Southern California from other states are not nearly so aggra-

(Continued on Next Page)

NEUROSYPHILIS

Clinical reports indicate that forty to fifty per cent of cases of early paresis show symptomatic improvement under Tryparsamide therapy. The treatment does not disrupt the patient's daily routine of life and is available through the services of his personal physician. The cost of Tryparsamide has been reduced. The present price to physicians is, 1 Gm. ampul 40 cents; 2 Gm. ampul 55 cents; 3 Gm. ampul 70 cents. Clinical reports and treatment methods will be furnished on request.

Tryparsamide

Mfg. by arrangement with The Rockefeller Institute
for Medical Research — Patentee and Registrant

MERCK & CO. INC.
Rahway, N. J.

Ten Acres of Beautiful Grounds

COMPTON SANITARIUM and LAS CAMPANAS HOSPITAL
COMPTON, CALIF.

30 minutes from Los Angeles. 130 beds for neuropsychiatric patients. 40 beds for medical-surgical patients. Clinical studies by experienced psychiatrists. X-ray and clinical laboratories. Hydrotherapy. Occupational therapy. Ten acres landscaped garden. Tennis. Baseball. Motion pictures. Scientifically sound-proofed rooms for psychotic patients. Accommodations ranging from ward beds to private cottages.

GLENN MYERS, M. D., *Medical Director*
Philip J. Cunnane, M. D. G. Creswell Burns, M. D.
Helen Rislow Burns, M. D.
Office: 1052 West 6th Street, Los Angeles

(Continued from Preceding Page)

vating as they were two decades ago. It would seem, in fact, to judge from these figures, that only half as many advanced cases are coming into California as came into the state in 1911. Actually, in 1932, there were 225 deaths from tuberculosis among individuals who had lived in the southern counties for less than one year. In 1911, there were 369 deaths in such individuals. The following table provides detailed information relative to tuberculosis deaths by length of residence in California for the years 1931 and 1932:

	1931	*1932*
Under one month	28	21
One to three months	72	48
Four to six months	77	44
Seven to twelve months	165	112
Thirteen months to four years	684	573
Five to nine years	897	851
Ten years and over	3065	3093
Unknown	304	278

There were fewer deaths from tuberculosis among Mexicans in California in 1932 than in 1931. This is probably due to the exodus of people of this race to their native land. In proportion to population, the tuberculosis death rate is particularly high among Chinese in California, as well as among Japanese. The following table gives deaths from tuberculosis by races in California for 1931 and 1932:

	1931	*1932*
White	3467	3314
Negro	178	185
Indian	63	67
Chinese	107	106
Japanese	149	136
Mexican	1195	1072
Others	133	140

A review of tuberculosis mortality statistics in California over a long period of years emphasizes the fact that successful results have been achieved through

LIVERMORE SANITARIUM

The Hydropathic Department devoted to the treatment of general diseases excluding surgical and acute infectious cases. Special attention given functional and organic nervous diseases. A well equipped clinical laboratory and modern X-ray Department are in use for diagnosis.

The Cottage Department (for mental patients) has its own facilities for hydropathic and other treatments. It consists of small cottages with homelike surroundings, permitting the segregation of patients in accordance with the type of psychosis. Also bungalows for individual patients, offering the highest class of accommodation with privacy and comfort.

GENERAL FEATURES

1. Climatic advantages not excelled in United States. Beautiful grounds and attractive surrounding country.
2. Indoor and outdoor gymnastics under the charge of an athletic director. An excellent Occupational Department.
3. A resident medical staff. A large and well trained nursing staff so that each patient is given careful individual attention.

Information and circulars upon request
Address: CLIFFORD W. MACK, M. D.
Medical Director
LIVERMORE, CALIFORNIA
Telephone 7-J

CITY OFFICES:

SAN FRANCISCO
450 Sutter Street
DAvenport 3523

OAKLAND
1624 Franklin Street
GLencourt 5989

the control methods that have been instituted and enforced. There is every indication that problems associated with the control of this disease have become stabilized to a certain extent in California and that the state does not suffer at the present time from the migrations of advanced cases to this state as it did during earlier periods.—*Weekly Bulletin, California Department of Public Health.*

The Role of Ticks in Disease Transmission.—Several species of ticks in California have been recognized as carriers of certain serious and often fatal communicable diseases. Chief of these are Rocky Mountain spotted fever and relapsing fever. The species involved in the transmission of these two diseases are quite different. It is an established fact, however, that individuals who may be devoted to outdoor life should take special precautions against invasions by all types of such insects.

In western states the insect which is responsible for the transmission of Rocky Mountain spotted fever to human beings is the common wood tick, known as the *Dermacentor andersoni.* At the present time, if not earlier in the season, these ticks are most numerous. They are generally found on long grass and on the leaves of brush where they may easily become attached to passing animals and human beings.

The United States Public Health Service advocates three measures which may be used to prevent Rocky Mountain spotted fever. The first is to avoid ticks, the second is to remove ticks from the person as early as possible and the third is to be vaccinated against the disease. The Service states that on camping trips, if it is necessary to sleep in the open, care should be used in selecting a site for placing the bed, as ticks will crawl into a bed laid on the ground. Because of the fact that ticks are generally more numerous where rodents are more abundant, areas that are well populated with rodents should be avoided in selecting a camp ground. The safest camping site for absence of ticks is unquestionably in standing timber where low vegetation is sparse. Proximity to trails and old roads should be avoided. In sections where sagebrush grows this growth should be avoided always. Brushy areas along streams are also unsuitable as camping grounds in so far as the presence of ticks is concerned. Ticks tend to concentrate on vegetation along the sides of trails and in brush growing along the edge of wooded areas. Grassy strips in the middle of little-used roads are often dangerous and all vegetation along roadsides should be avoided.

Suitable clothing, worn so as to prevent ticks from getting underneath, is of vast importance in the prevention of tick bites. High boots, leggings, puttees, or socks that are worn outside the trouser leg are effective, but in spite of their use ticks will climb up the outside of the clothing. When they appear upon the neck they can generally be removed before biting. The United States Public Health Service states that passing the hand over the neck occasionally to feel for ticks is a good habit to acquire. The insects are more likely to secure a hold on rough clothing than on smooth clothing. They are able to travel much faster, however, on smooth material than upon rough material. In spite of all precautions a certain number of ticks will reach the body through the various openings in the clothing. It is important, therefore, that the inside of the clothing, as well as the body, be examined frequently. Since ticks seldom attach immediately (unless late in the season) and are seldom infectious until after having been attached for a few hours, examinations of clothing and body made twice each day, early in the afternoon and upon retiring, ordinarily should be sufficient. In heavily infested tick areas or in sections known to be particularly dangerous more frequent examinations should be made.

The insects may be removed with the fingers, but a small pair of forceps or tweezers is better. With

(Continued on Next Page)

THE PARK SANITARIUM

1500 PAGE STREET ✓ SAN FRANCISCO, CALIFORNIA ✓ *Telephone* MARKET 0331

TYPICAL BEDROOM

IT is our belief that The Park Sanitarium can only function to its best advantage by having the good will and support of the medical profession. When *your* patients are referred to us they remain in *your* care. All patients have individual rooms and your instructions are executed by a trained personnel with daily reports furnished to out-of-town doctors. Our staff includes a resident physician and a competent corps of graduate nurses. We would welcome your investigation of our services.

Attractive rates given for chronic cases ✓ ✓

Booklet on request

(Continued from Preceding Page)

these instruments the tick may be seized by the head, close to the skin, and removed without danger of leaving the head embedded in the skin. Care should be exercised against crushing the tick, as the contents of infected ticks are dangerous. After removing or handling the insects the hands should be washed thoroughly with soap and water.

Individuals whose occupation may take them into the wilds during the spring and early summer should be vaccinated against Rocky Mountain spotted fever. This vaccine has been developed by the United States Public Health Service in its Rocky Mountain Spotted Fever Laboratory at Hamilton, Montana. Physicians may secure vaccine from the laboratory for the protection of their patients. For its full protective value the vaccine should be administered at least ten days before exposure to tick bites. The vaccine is of no value in the treatment of the disease.

Less is known about the tick, in California, that may be involved in the transmission of relapsing fever. It would appear, however, that in certain sections of the high mountains there is a small brown tick that may be responsible for the transmission of the disease. This tick is found upon rodents, including the chipmunk, and it is found in the burrows of ground rodents upon which it feeds. Unlike the common wood tick this insect generally drops off the body immediately following its bite. It is known that this species of tick bites man and animals, particularly during the night hours. It is sometimes found in cabins and old buildings in the mountainous districts. Individuals who plan vacations in areas of the state where ticks abound should take ordinary and reasonable precautions against bites of these insects.

While cases of Rocky Mountain spotted fever and relapsing fever are not found in great numbers in California they occur each year, causing great discomfort and often resulting fatally. Ticks of all sorts

(Continued on Page 28)

For use in the Prevention and Treatment of the Acid-Ash Type of

ACIDOSIS

California Lima Bean FLOUR!

Alkalinity, of course, neutralizes *acidity*. And Limas are one of the most alkaline foods known—41.65 per 100 grams!

To meet a definite demand from the medical profession, we have developed, to a high degree of fineness, a Lima Bean FLOUR—for making non-acid breads, muffins, pancakes and waffles for Basic Diet menus!

Lima FLOUR— is available in 10-lb. bags at $1.20, and in 100-lb. bags at $10.00. Upon receipt of price and delivery instructions your order will be shipped parcel post or express collect. Send orders, and make check or money order payable to—

CALIFORNIA LIMA BEAN
GROWERS ASSOCIATION
Oxnard, California

1

_about Cigarettes

Of all the ways in which tobacco is used the cigarette is the mildest form

YOU know, ever since the Indians found out the pleasure of smoking tobacco, there have been many ways of enjoying it.

But of all the ways in which tobacco is used, the cigarette is the mildest form.

Another thing—cigarettes are about the most convenient smoke. All you have to do is strike a match.

Everything that Science knows about is used to make Chesterfields. The right home-grown and Turkish tobaccos are blended and cross-blended the Chesterfield way. The cigarettes are made right and the paper is right.

There are other good cigarettes, of course, but Chesterfield is

the cigarette that's milder, the cigarette that tastes better. Chesterfields satisfy—we ask you to try them.

Chesterfield

© 1933, Liggett & Myers Tobacco Co.

FRENCH HOSPITAL • Geary Street and Fifth Avenue
SAN FRANCISCO, CALIFORNIA

HENRI J. BAZERQUE, *President*
V. LABRUCHERIE, *Superintendent*
ALBERT AUBERT, *Secretary*
ELSIE E. MITCHELL, R. N., *Supt., School of Nursing*

A general hospital of 225 beds operating an accredited school of nursing, admitting all classes of patients except those suffering from mental diseases. Organized in 1851 and is operated by the French Mutual Benevolent Society, through a Board of Directors, a chief executive officer and staff. Accredited for intern training by the American Medical Association and approved by the American College of Surgeons

MEDICAL STAFF

Medicine
A. N. FREGEAU, M. D., Chief
E. S. KILGORE, M. D., Consultant in General Medicine
THOMAS G. INMAN, M. D., Consultant in Neuropsychiatry
MARK GERSTLE, JR., M. D., Consultant in Neurology
ERNEST D. CHIPMAN, M. D., Consultant in Dermatology
JAY JACOBS, M. D., Consultant in Dermatology
CABOT BROWN, M. D., Consultant in Lung Diseases

Urology
A. H. McNULTY, M. D.
ALVIN E. CERF, M. D.
SAMUEL A. GOLDMAN, M. D.

Radiology
LLOYD B. CROW, M. D.

Surgery
ASA W. COLLINS, M. D., F.A.C.S., Chief
HAROLD M. GILFILLAN, M. D., Assistant
CARL L. HOAG, M.D., F.A.C.S., Associate
E. B. TOWNE, M. D., Consultant in Neurological Surgery
EDMUND J. MORRISSEY, M. D., Consultant in Neurological Surgery
GEORGE WARREN PIERCE, M. D., Consultant in Plastic Surgery
W. L. ROGERS, M.D., Consultant in Lung Surgery

House-Visiting Department
COLEMAN A. BLOCK, M. D.
LOUIS D. RONCOVIERI, M. D.

Pediatrics
BRADFORD F. DEARING, M. D.

Anesthesia
HERMAN MARCUS, M. D., Chief
ELLIS D. HARMON, M. D.

Orthopedics
ALFRED RONCOVIERI, M. D.
FRANK A. LOWE, M. D.
RALPH SOTO-HALL, M. D., Consultant

Ophthalmology and Oto-Laryngology
E. C. FABRE-RAJOTTE, M.D., Chief
VICTOR D'ERCOLE, M. D., Assistant

Obstetrics and Gynecology
W. J. HAWKINS, M. D., F. A. C. S.
R. F. GRANT, M. D.
J. K. PLINCZ, M. D.
CHESTER L. COOLEY, M. D.

Pathology
MARION H. LIPPMAN, M.D., Director Clinical and Pathological Laboratory
DAVID A. WOOD, M.D., Pathologist

QUALITY SERVICE DEPENDABILITY

DIEDERICH OPTICAL COMPANY, INC.
WHOLESALE AND MANUFACTURING OPTICIANS

OCULISTS' PRESCRIPTIONS FILLED

The prescription service we offer is backed by our name, which has been attained by doing high grade work for many years.

649 SOUTH OLIVE STREET LOS ANGELES, CALIFORNIA

(Continued from Page 26)

should be avoided scrupulously in order to prevent the development of these diseases.

Another disease in which ticks are involved is tularemia. To be sure, the possibilities for direct infection by contact with infected rabbits are of first importance. Nevertheless, the spread of the disease among animals is largely through insect vectors, among which ticks are important. Some cases of tularemia have been contracted through the crushing and handling of infected ticks. Most cases of the disease among human beings, however, are due to handling sick rabbits and particularly to infection contracted while skinning such rabbits.—*Weekly Bulletin, California Department of Public Health.*

Ratproofing of Buildings Is Important.—Neither trapping nor poisoning nor the combination of the two will alone rid premises of rats. Only ratproofing of a permanent character will eliminate the rat from buildings.

Usually, we have to deal with three varieties of rats: (1) *Mus norvegicus,* known as the brown, wharf or Norway rat. He is a burrower and usually makes his home in, or in close proximity to, the ground, being most commonly found inhabiting ground areas of buildings, and beneath floors. (2) The *Mus rattus,* the English black rat, and (3) the *Mus alexandrinus,* the Egyptian or roof rat. The latter two species are about the same size, and are smaller than the Norway rat. They show preference for upper floors and are able to live between ceilings, in walls, and on roofs. They are remarkable climbers, their agility permitting them to pass from roof to roof by telephone and electric wires or other means, and their great trap shyness and cunning render them more difficult of control than their larger relative.

More doctors

are sending us

HERNIA cases—

It is very gratifying to us when we can please both physician and patient. Our Truss Department has been quite busy this summer, and much of the work has been for doctors' out-of-town patients. Our fitters have been commended for their patience and skill. We realize that new and scientific appliances are not enough, unless coupled with satisfactory service.

DESIGNERS, BUILDERS, FITTERS OF SURGICAL, ORTHOPEDIC AND PROSTHETIC APPLIANCES

Phone MArket 4244

HITTENBERGER

Quality and Service since 1912

1115 MARKET ST. 460 POST ST.

SAN FRANCISCO

In the presence of the unchecked Norway rat, comparatively few black or roof rats may be found inhabiting basements and ground floors. They are generally acceded to be the most common ship-borne rat; they are by far the most common form trapped on ships visiting the Pacific Coast from foreign ports.

These differences in the natural habitat being appreciated, it will be seen that any plan for the elimination of the rat must contemplate the ratproofing of the building from the basement to the roof.

The simplest form of ratproofing for small structures or dwellings of temporary nature is to raise the first floor 18 inches off the ground and leave the space beneath open on three sides, and keep area beneath building free from rubbish.—*Weekly Bulletin, California Department of Public Health.*

Local Campaigns Against Ragweed Will Reduce Autumn Hay Fever.—Campaigns to eradicate ragweed from towns and cities and outlying regions can decrease the danger of hay fever from that source, Leaflet 95-L, How to Control Ragweed, the Principal Cause of Autumn Hay Fever, just issued by the United States Department of Agriculture says.

The Public Health Service, which has approved the suggestions in the publication, estimates that of the two types of hay fever, spring and autumn, 65 per cent of the cases are in the fall, and 90 per cent of these cases east of the Mississippi River are caused by ragweed.

At the same time the department absolves goldenrod of much of the usual blame for hay fever. Goldenrod pollen is carried about by insects, and does not float in the air like ragweed and other hay fever pollens.

The leaflet describes the two types of ragweed, the common and the big, which are chiefly responsible for autumn hay fever. Although the department realizes that eradication of the weed in country districts

(Continued on Next Page)

Importance of milk in the *adult* diet

MILK is the one food for which there can be no effective substitute. But many adults dislike milk; often those who need it most soon tire of its taste and color.

However, Cocomalt mixed with milk produces a delicious, chocolate flavor drink which is tempting to children and grown-ups alike. Prepared as directed, it increases the caloric value of milk more than 70%—adding extra proteins, carbohydrates and minerals (calcium and phosphorus). Cocomalt is rich in Vitamin D—containing not less than 30 Steenbock (300 ADMA) units per ounce. (Licensed by the Wisconsin Alumni Research Foundation.)

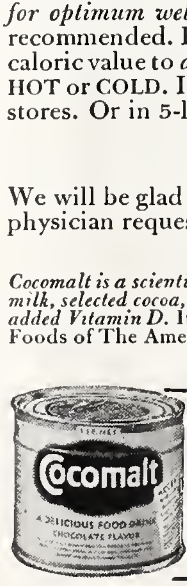
Not only in sickness and convalescence, in pregnancy and lactation, in general debility and malnutrition—*but for optimum well-being at all times,* Cocomalt in milk is recommended. Every glass, properly prepared, is equal in caloric value to *almost two glasses of milk alone.* Delicious HOT or COLD. In ½-lb. and 1-lb. cans at grocery and drug stores. Or in 5-lb. cans at a special price for hospital use.

Free to Physicians

We will be glad to send a trial-size can of Cocomalt to any physician requesting it. Mail coupon below.

Cocomalt is a scientific food concentrate of sucrose, skim milk, selected cocoa, barley malt extract, flavoring and added Vitamin D. It is accepted by the Committee on Foods of The American Medical Association.

ACCEPTED AMERICAN MEDICAL ASSN Committee on Foods



R. B. DAVIS CO., Dept. BC-8 Hoboken, N. J.
Please send me a trial-size can of Cocomalt, *free.*
*Dr.*__________
*Address*__________
*City*__________ *State*__________

CALSO WATER

Palatable ALKALINE *Sparkling*

NOT A LAXATIVE

Calso Water: An efficient method of supplying the normal ALKALINE SALTS for counteracting ACIDOSIS.

Calso Water: Made of distilled water and the ALKALINE SALTS (C. P.) normally present in the healthy body.

Calso Water: Counteracts and prevents ACIDOSIS, maintains the ALKALINE RESERVE.

●

The Calso Company

524 Gough Street
San Francisco

Transportation Bldg.
Los Angeles

A FEW CHOICE LOCATIONS AVAILABLE

AT A REDUCED RENTAL SCHEDULE

APPLY TO

CHAS. W. SMITH

BUILDING MANAGER

ROOM 415 450 SUTTER STREET

Telephone GARFIELD 7221

FOUR FIFTY SUTTER

(Continued from Preceding Page)

is difficult, it gives directions for such work and calls attention to the need for cutting the weeds along highways and on vacant lots in cities and towns.

Eradication campaigns by civic groups will decrease the quantity of ragweed pollen in the air sufficiently to keep persons only slightly subject to the fever from contracting it. This will lessen the severity of the disease for those more subject to it.

Ragweed should be cut twice a year, the leaflet says, the first time just before it flowers, and again before flowers develop on the low-growing branches which appear after the first cutting.

How States Are Caring for Indigent Cases of Syphilis.—The facilities provided by certain cities in the state for the care of indigent cases of syphilis were discussed in recent issues of *Health News* (May 1, 8, and 15). In the present article the problem is considered from the standpoint of upstate New York as a whole and with reference to the situation in other states.

From surveys of the prevalence of syphilis in the state outside of New York City, it is estimated that the upstate "attack rate," that is, the number of newly acquired infections per year, is 4.4 per 1,000 population. Incidentally, this is the largest single area for which a survey has been made for the purpose of determining this rate.

Assuming that 4.4 represents a reasonable attack rate for a typical population, the total number of syphilis cases in the thirty-five states listed in the table, computed on the basis of an aggregate population of 100,000,000, would be 440,000, provided the character of the population were comparable to that of upstate New York.

Report of new cases admitted to 533 clinics furnished through state health departments:*

State	Population (Estimated as of July 1, 1932)**	New Syphilis Clinic Cases†	Rate for Clinic Cases Per 100,000 Population
Alabama	2,711,679	11,233	414.2
Arkansas	1,876,933	4,658	248.2
California	6,171,239	5,408	87.6
Colorado	1,056,900	658	62.3
Connecticut	1,656,572	802	48.4
Delaware	241,755	129	53.4
District of Columbia	497,691	1,532	307.8
Florida (six months)	1,577,910	535	33.9
Georgia	2,893,050	2,376	82.1
Illinois	7,882,078	7,047	89.4
Indiana	3,306,138	1,975	59.7
Iowa (eleven months)	2,485,628	575	23.1
Kansas	1,905,528	466	24.5
Kentucky	2,658,043	3,631	136.6
Louisiana	2,168,124	474	21.9
Maine	803,879	287	35.7
Maryland	1,671,448	3,037	181.7
Massachusetts	4,336,817	2,731	63.0
Michigan	5,100,013	3,378	66.2
Minnesota	2,602,769	406	15.6
Missouri	3,678,826	1,936	52.6
Nebraska	1,395,873	583	41.8
New Hampshire	470,168	64	13.6
New Jersey	4,235,698	4,430	104.6
New York (upstate)§	5,843,392	6,772§	115.9
North Dakota	688,302	13	1.9
Ohio	6,841,471	7,304	106.8
Oregon	991,190	358	36.1
Pennsylvania	9,831,399	3,753	38.2
Rhode Island	705,738	507	71.8
Tennessee	2,677,728	6,051	226.0
Virginia	2,446,582	2,857	116.8
Washington	1,608,786	802	49.9
West Virginia	1,787,486	2,084	116.6
Wisconsin	3,006,383	917	30.5
	99,813,216	89,769	89.9

** Population estimates based upon United States Censuses of 1920 and 1930.

† From the Annual Report of the United States Public Health Service for the fiscal year July 1, 1931, to July 1, 1932.

§ Applies only to upstate New York. The city of New York does not report clinic cases to the United States Public Health Service.

---

* States which did not report and those which had no clinics have been omitted from this table.

The California Sanatorium

Belmont (San Mateo County), California

FOR THE TREATMENT OF TUBERCULOSIS

Completely Equipped ✓ *Excellent Cuisine*

DR. MAX ROTHSCHILD
Medical Director

DR. HARRY C. WARREN
Assistant Medical Director

Rates and Prospectus on Request

San Francisco Office
384 Post Street
Phone DAVENPORT 4466

Address: BELMONT, CALIF.
Phone BELMONT 100
(3 Trunk Lines)

Extensive studies made by the United States Public Health Service,‡ covering about a fifth of the country, indicate that syphilis is more prevalent among the negro (7 per 1,000) than among the white population (4 per 1,000). For example, some of the southern states have a considerable colored population, namely, Alabama, 35.7 per cent; Arkansas, 25.9; Florida, 29.5; Georgia, 36.8, Louisiana, 37.3; Tennessee, 18.3; and Virginia, 26.9. Thus, the attack rate for these states would be greater in proportion to the negro population.

Taking this factor into consideration, the total number of cases in the thirty-five states listed would probably approximate at least 500,000. About 250,000 would have to be cared for at public expense, since clinic studies have shown that under present economic conditions not less than 50 per cent of persons afflicted with syphilis are unable to pay for adequate treatment. About 90,000 cases, or approximately 36 per cent, of the theoretical indigent cases actually received treatment at clinics.

If the above assumptions approach actual conditions, one may gauge from the rate column of the table to what extent each state is caring for its indigent cases. It should be borne in mind that the theoretical rate for indigent cases is 220 per 100,000 population except for the southern states, where it would probably be greater. In the thirty-five states referred to, 36 per cent of the estimated indigents are receiving clinic care. In upstate New York 52 per cent, or 44 per cent more than the average for the country as a whole, receive such care.

In considering any particular state too much reliance cannot be placed on an estimate of this kind, since local conditions may change the picture materially. Probably the only conclusions justified are that syphilis constitutes a major public health problem, and that, although statistics show it is receiving increased consideration, the clinic service is at present far from adequate.—*Health News.*

Ivy Poisoning.—*What Is Ivy Poisoning?*—Ivy poisoning is a peculiar inflammation of the skin caused by coming in contact with poison ivy. Sumac poisoning is analogous. The symptoms range from slight redness and itching to enormous swelling with extensive blisters, accompanied by severe burning sensations. There are all gradations between these extremes. In mild cases the skin is covered with numerous small blisters. The blisters contain a colorless serum which is not poisonous; consequently poisoning cannot spread from broken blisters. Pustules may form and infections may result as secondary consequences. The disease tends to recover in from ten days to three weeks. Occasionally a persistent dermatitis follows.

How Poison Ivy and Poison Sumac May Be Recognized. Poison ivy is known by various names in different parts of the country, such as poison ivy, poison oak, poison vine, three-leafed ivy, and poison creeper. The plant is found in practically every part of the continental United States, high mountains and deserts excepted. . . .

Poison ivy may be best recognized by its leaves and by its fruits. Each leaf is divided into three leaflets (never five as in the Virginia creeper). The margins of the leaflets vary from smooth to more or less notched. The small greenish flowers appear in May and June, the male and the female flowers being borne on separate plants. The fruits, which are of the size of a small pea, are pale green and poisonous when immature, but ivory-white and not poisonous after ripening. The ripe fruits are filled with fat and are eaten by crows, woodpeckers, and other birds. After the plants are a year or two old they develop aerial rootlets along the stems. These assist the plant in climb-

(Continued on Page 34)

---

‡ The Extent of the Problem of Gonorrhea and Syphilis in the United States, Thomas Parran, Jr., M. D., and Lida J. Usilton, *Social Hygiene*, 16, 1930, 31.

ELI LILLY AND COMPANY

FOUNDED 1876

Makers of
Medicinal Products

In the non-diabetic, undernutrition is frequently encountered. That this condition may be at times dependent upon, or at least associated with, relative or absolute "dextrose deficiency" is suggested by the fact that therapeutic benefit follows when additional carbohydrate is supplied and its utilization assured with Insulin.

AN INTERESTING PAMPHLET

The Use of Insulin
in Non-Diabetic Malnutrition

WILL BE SENT TO PHYSICIANS ON REQUEST

ADDRESS ELI LILLY AND COMPANY, INDIANAPOLIS, INDIANA, U. S. A.

CALIFORNIA
AND
WESTERN MEDICINE

Owned and Published Monthly by the California Medical Association
FOUR FIFTY SUTTER, ROOM 2004, SAN FRANCISCO
ACCREDITED REPRESENTATIVE OF THE CALIFORNIA AND NEVADA MEDICAL ASSOCIATIONS

VOLUME XXXIX AUGUST, 1933 No. 2

PERNICIOUS ANEMIA—ITS NATURE AND A CONSIDERATION OF RECENT ADVANCES IN THE TREATMENT OF THE DISEASE*

By CYRUS C. STURGIS, M. D.
AND
RAPHAEL ISAACS, M. D.
Ann Arbor, Michigan

OUR views concerning the nature of pernicious anemia have undergone considerable revision within the past decade, especially with reference to the underlying mechanism of the disease, the proper form of treatment, and the prognosis. It seems fair to state that more accurate and fundamental information has been accumulated relating to this condition in the past few years than had been known in the previous eighty-odd years in which it had been recognized as a clinical entity. For many years there were two conflicting views concerning the cause of the anemia in pernicious anemia. The original concept of Connheim [1] held that the anemia resulted from defective blood formation, whereas William Hunter,[2] some years later, contended that the fundamental cause was increased blood destruction. He regarded the hyperplastic bone marrow as evidence of a compensatory effort to supply an increased number of red cells to the peripheral blood. Recent investigations (Peabody,[3] Castle,[4] Minot and Murphy,[5] Sturgis and Isaacs [6]) have supplied new data from which it is possible to construe a logical working hypothesis concerning the fundamental cause of the condition. While there still remain many gaps in our knowledge, nevertheless the present viewpoint is the most adequate conception of the disease which has been offered up to the present time.

THE NATURE OF THE DISEASE

It appears to be certain that there is an hereditary, constitutional and racial predisposition to pernicious anemia. It occurs most commonly in England, Ireland, Canada and the United States, whereas it is rare in China, South America, and among negroes. In the 580 cases recently studied at the Simpson Memorial Institute the incidence was significantly greater in the English-speaking people and Scandinavians than it was in immigrants from Russia, Italy, and eastern Europe. It now seems to be well established that there is a familial incidence in pernicious anemia. This statement is supported by the fact that 27 per cent of our patients stated that there was an additional case of "anemia" in their families, whereas only 9 per cent of a nonpernicious anemia group of equal numbers gave an affirmative answer to this question. Among our group of patients, furthermore, there have been a number of brothers and sisters with the disease, and other instances are reported in the literature where it has occurred in five or even seven members of the same family.

An additional factor which is undoubtedly of etiologic importance is the persistent abnormality in the gastric contents as indicated by the achlorhydria. In not a single patient in our group of 580 was free hydrochloric acid found to be present either following the standard test-meal or with the newer technique employing the injection of histamin. Furthermore, those patients who have had a gastric analysis many years prior to the onset of the symptoms of pernicious anemia have then had an achlorhydria. Finally, we have never observed the return of free hydrochloric acid in our patients despite an apparent complete return of health following treatment. While this gastric defect, appearing as it does in almost all patients with pernicious anemia, had for many years suggested the possibility that the stomach was in some way fundamentally concerned with the etiology of pernicious anemia, it was not until the brilliant investigations of William B. Castle [4] that the assumption was clearly established. This observer demonstrated conclusively that the stomach of a patient with pernicious anemia lacked the ability to secrete a substance whose function was to interact with some article ingested in the diet, thereby liberating "something" which controlled the maturation of the red blood cells in the bone marrow. The material contained in the diet, which is called the intrinsic factor, is unidentified, although Strauss and Castle [7] suggest that it is vitamin B_2. The active component of the gastric juice, the exact nature of which is unknown, is possibly of an enzyme-like character. Castle [4] speaks of this as the intrinsic factor. While an achlorhydria is constantly found in these patients, it is probable this is not the essential defect of the gastric secretion. This is suggested by the observation that the effective substance is liberated when the two factors are brought together in a neutral medium outside the body. In addition, patients without true pernicious anemia yet with a blood picture resembling this condition, have been observed who had free acid present in the gastric contents, but lacked the intrinsic factor which is essential to the normal maturation of the red blood cells.

---

* From the Thomas Henry Simpson Memorial Institute for Medical Research, University of Michigan, Ann Arbor.

* Guest speaker paper read before the general meeting of the California Medical Association at the sixty-second annual session, Del Monte, April 24-27, 1933.

It is suggested that this material thus formed normally in the stomach, passes through to the intestines, from which it is absorbed by the blood stream and transported to the liver, where it is stored until called upon to function in the control of the development of the red blood cells. If this assumption concerning the normal mechanism is correct, it is possible theoretically that the seat of a macrocytic anemia, resembling pernicious anemia, may be due to one of four causes: first, a diet deficient in vitamin B_2 (as in sprue) or some other food factor; second, a lack of the intrinsic factor as observed in pernicious anemia or in total gastrectomy; third, an inability to absorb the material which is formed by the interaction of the intrinsic and extrinsic factors. Anemia of this type has been observed in patients following operations such as multiple intestinal anastomosis, with a resultant diminished intestinal area for absorption; fourth, as suggested recently by Dr. S. Milton Goldhamer [8] of our laboratory, intensive liver damage as seen in cirrhosis of the liver, which prevents storage of the material controlling red blood-cell maturation.

Any present-day consideration of this disease should not fail to emphasize that it is not only a disease of the blood, but also is usually characterized by important lesions in the nervous and gastro-intestinal systems. In a great majority of patients, all three systems are involved, but usually the anemia is the most conspicuous aspect of the clinical picture. In other patients, however, the initial and most prominent complaint may be referred to a glossitis or to the nervous system. Many months after these initial complaints have been present, the characteristic anemia of pernicious anemia may appear. The etiology of these changes referable to the gastro-intestinal and nervous systems is obscure, despite the new information which so satisfactorily explains the anemia.

THE TREATMENT OF PATIENTS WITH PERNICIOUS ANEMIA

Since 1926 a variety of forms of therapy have been used successfully in the treatment of pernicious anemia and a sufficient period of time has now elapsed to evaluate each type and consider its merits and possible disadvantages. The original liver diet as introduced by Minot and Murphy [5] was one containing 240 grams of cooked calf's liver and a relatively low fat content. Since this form of diet was introduced about seven years ago, it has been determined that beef, calf, fish, chicken, and pork liver, either cooked or uncooked, is effective if consumed in adequate amounts. Experience has determined, however, that calf's liver is the most satisfactory on account of the superior taste and texture, although it should be remembered that pork or beef liver is apparently equally efficacious and has the advantage of being extremely low in cost, which is of considerable importance in the present financial depression. The liver may be cooked in almost any form, as the active principle is relatively stable toward heat. Some patients prefer to consume the liver raw after it has been prepared by mincing in the finest meat grinder attachment and mixed with water. The average dose of such liver is one-half pound daily until the blood count reaches normal, after which time it should be given in doses averaging one-fourth pound or more, five or six times a week in order to maintain the blood in a normal condition. Different patients may require variable doses. Although liver therapy in this form is effective, it is not a very practical method of giving the treatment, as many patients have a distaste for liver and very few, in my experience, will continue to consume an adequate amount of it over a long period of time. The oral use of liver extract as originally introduced by Minot and Cohn [9] is a far superior form of treatment than whole liver. When this concentrated powder is given in daily doses, which are equivalent to 500 to 600 grams of liver, the results are entirely satisfactory. This material may be dissolved in water, tomato juice or ginger ale, and the entire daily dose taken at once or consumed in two equal portions. It possesses the advantage of being easy to take, but the disadvantage of being costly. All physicians should be warned, however, that there are many preparations of this type which are commercially available, and in the past some of them have been inert or only weakly potent. As the unfortunate selection of such a product deprives the patient of definite, striking and immediate beneficial results, it is a matter for serious consideration. In order to avert such a possibility, the physician should prescribe only liver extract which has been tested clinically and certified as potent, as there is no other reliable means of assay.

Desiccated, defatted hog's stomach (ventriculin) was introduced as a practical form of treatment in 1929 [17] and now, after being subjected to a thorough clinical trial in many patients, can be said to be highly effective. The results obtained by this form of treatment are entirely equal to those obtained by liver extract. Some patients consider that this material is more pleasant to take than liver extract, although it is not soluble, but may be given suspended in water, tomato juice, or ginger ale. As the active principle in stomach differs from that in liver by being susceptible to heat, it may be destroyed in the process of manufacture. Stomach materials, therefore, should not be used except in lots which have been certified as potent, following a careful clinical trial.

The most recent form of treatment is the parenteral administration of liver extract, which has now been used for about three years. Following the publication by Castle and Taylor,[10] in which they reported the use of this material intravenously, we have had an extensive experience with this form of therapy. Our material for intravenous use has been prepared according to an original method,[11] and has proved to be highly potent in the treatment of this disease. This material, when prepared according to a method previously described, can be given intravenously with slight, if any, unfavorable symptoms, and produces a striking response of the bone marrow. Often within thirty-six hours after the injection there is an increase in the number of reticulocytes, and these reach their greatest height on the fifth or sixth day; then the curve slowly diminishes until the percentage of these cells falls below one or two. The reticulocyte response from the intravenous administration of liver extract is similar to that observed when liver or ventriculin is given by mouth, with the exception that the increase in the number of the cells occurs more promptly following the injection, and the percentage of these cells at the peak of the curve is greater.

Our observations indicate that liver extract is twenty to thirty times more potent when given intravenously, which is in accord with the original conclusion of Castle.[10] The preparation which was used has a volume of 20 cubic centimeters and contains the potent material derived from 100 grams of whole liver. This dosage should be given once every five to seven days until the red blood cell count reaches normal limits, and then at monthly intervals to maintain the blood at that level. The injections should be given slowly in order to prevent the appearance of untoward symptoms. When liver extract prepared according to the method of Castle[10] is used, rather severe symptoms may occur. These may appear from a few minutes to an hour after the injection, and consist of nausea, vomiting, chills and fever. The severe symptoms persist for only a short interval, but fever may be present for several hours. Realizing that such severe reactions were disadvantageous and that they prevented the widespread use of the material, the staff of the Simpson Memorial Institute attempted, with considerable success, to refine the product in order to retain its full potency, but eliminate the material responsible for the reactions. As has been reported elsewhere,[11] a method has been perfected which accomplishes this fairly satisfactorily, although an occasional patient may complain of minor symptoms following the injections. During the past two years 160 patients have received 1,500 injections and, although a few patients have experienced reactions, they have not in any instance been alarming.

Although the intravenous method has a number of advantages over other forms of treatment, it is not recommended that it should entirely supplant them. Many patients prefer to have an intravenous injection at monthly intervals and thereby be relieved of daily dosage of liver, liver extract, or ventriculin by mouth. In some instances, such as large out-patient clinics, it is less expensive and has proved to be a highly satisfactory form of treatment. Any method whereby the treatment is given daily by mouth, too often fails because the patient will discontinue the medication entirely or consume an inadequate amount when the blood reaches normal or the symptoms diminish. There is a greater assurance that the patient will receive adequate treatment when the amount of medication necessary for a month is injected at one time. The rationale of maintaining the blood in a normal condition by treatments at such long intervals has been questioned, but there is no indication that this plan of medication is ineffective. On the other hand, experience with this form of treatment suggests very strongly that entirely satisfactory results can be obtained. The final proof of the value of this treatment, as with any other, can be demonstrated only by the observation of its effect on a large group of patients for a period of several years. These data are now being collected from the continued study of a large group of patients who are under our observation.

The treatment of pernicious anemia by the intramuscular injection of liver extract was first reported by Gansslen[12] and later investigated by Strauss, Taylor, and Castle,[13] Murphy,[14] Connery and Goldwater,[15] and others. Suitable preparations may be made by the method suggested by Strauss and his associates, and a number of effective products are now available commercially. This form of liver treatment produces satisfactory results, and there are insignificant local and general reactions following the injections. It has the disadvantage of requiring injections at much more frequent intervals than is needed with the intravenous injections, although the exact amount required to bring the blood to normal and maintain it there has not been accurately determined.

Recently Morris and his associates[16] have reported a remarkable remission in two patients with pernicious anemia, following the single intramuscular injection of concentrated material derived from large amounts of swine gastric juice. The reticulocytosis of thirty-four and forty-four days' duration far exceeded the response obtained from any other form of treatment. These results are of great interest from a theoretical standpoint and, should further studies confirm their early observations, it is possible that a more successful form of treatment may be developed which will surpass any other type which is now employed.

It should be emphasized repeatedly that the successful treatment of pernicious anemia depends upon the administration of adequate amounts of a material of known potency. Many patients relapse or have a response which is only partially successful because this advice is disregarded. The doses of the various substances used in the treatment of this disease are the ones which are usually satisfactory for the average patient. It is known that an amount greater than these is required in patients with any type of active infection, in those with extensive arteriosclerosis, and in a third group for various reasons, including inadequate absorption, defective storage, and in some cases, factors which are still unknown. If the average dosage fails to result in the return of the blood to normal at the rate of 400,000 to 500,000 red blood cells per cubic millimeter per week, or, if the blood having reached normal is not maintained at that level, then an increased amount of the preparation is indicated.

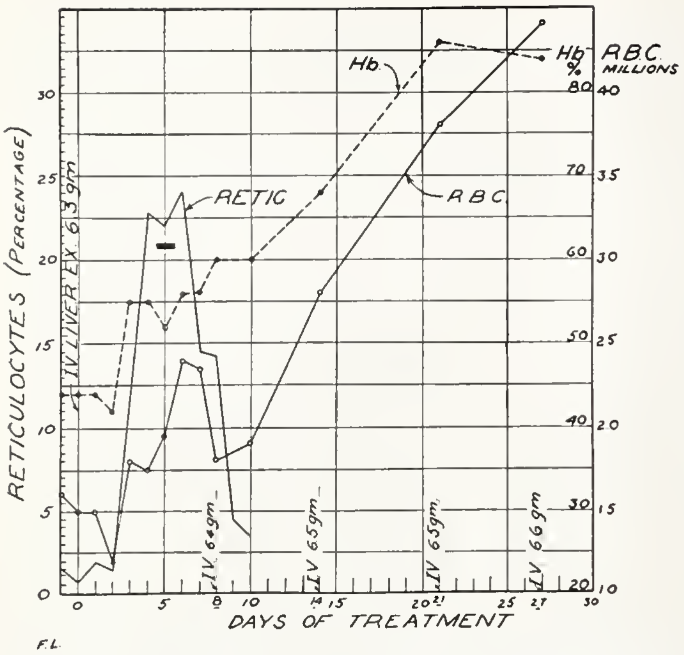


Chart 1.—Changes in red blood cell count, hemoglobin and reticulocyte percentage in a patient given five weekly intravenous treatments with liver extract, each dose representing 200 grams of fresh liver.

Various other therapeutic agents have been used for many years in the treatment of pernicious anemia before the introduction of the modern forms of treatment, but our experience indicates that these are usually not necessary or beneficial if the proper liver or stomach therapy is administered. Dilute hydrochloric acid was advised on the basis that almost all of these patients during a relapse had gastro-intestinal complaints and an achlorhydria. The results obtained from this drug before the use of liver were considered by some to be worth while, but a great majority of observers seriously questioned the value of this form of therapy even as a means of giving symptomatic relief. We have concluded that its administration is entirely unnecessary, as all of the gastro-intestinal complaints disappear following a therapeutically induced remission, regardless of continued and persistent absence of free hydrochloric acid in the gastric contents.

Blood transfusions, although in no sense curative, as indicated by an extensive trial prior to the introduction of effective treatment in 1926, are still useful in some instances. It is our custom to make all arrangements for a transfusion and have a suitable donor available for immediate use in all patients with a blood count of one million or less on admission. A transfusion may be lifesaving, as it serves to maintain the patient until the usual thirty-six or forty-eight hours elapse before the initial improvement following liver or stomach therapy is observed. In a number of instances, we have treated successfully patients who had a red blood cell count of 500,000 per cubic millimeter or less, by liver extract intravenously or by liver extract or ventriculin administered in large doses by a stomach tube, and have not considered transfusions necessary. Patients with pernicious anemia and an extremely low red blood cell count may develop a fatal pneumonia due to their low resistance, and it is, therefore, advisable to consider a blood transfusion as a preliminary measure in all such patients.

The elimination of any form of infection in these patients, if possible, is highly desirable, as it is definitely known that the presence of an active form of infection in a patient partially inhibits the response of the bone marrow to potent therapeutic agents. The removal of various foci of infection, such as teeth and tonsils, has been enthusiastically recommended and doubtless has resulted in improvement of the patient's condition in some instances. It may be said in general, however, that the presence of such foci has not prevented the proper response to liver or ventriculin, and when the sole therapeutic measure is the removal of either teeth or tonsils, slight, if any, improvement follows. There apparently is a widespread belief among the profession that infected teeth play an important etiologic rôle in pernicious anemia, as approximately one-third of the patients when first seen by us are edentulous. In some patients positive harm has followed the extraction of all the teeth, as after this procedure there is at least a temporary infection of the mouth and the patient's nutrition undoubtedly suffers when the proper artificial denture has not been fitted and a limited diet has been consumed for a considerable period of time. There is no indication that other remedies which have been used therapeutically in pernicious anemia in the past are of value in the modern treatment of the disease. Arsenic in various forms was the drug of choice for many years, and had the endorsement of Osler. While some improvement may follow its use, the results are so inferior to those obtained by liver or stomach that there does not appear to be any reason for recommending its use. There is slightly more evidence that occasionally iron may be of value in the treatment of some patients with pernicious anemia, but this has not been clearly established. Certainly during the stage of relapse there is no reason to believe that iron is necessary, for there is no deficiency of this substance in the body as indicated by a high serum iron and an excess in various organs, such as the liver and kidneys. Following an induced remission there is a loss of iron from the body and at this time a greater increase in the total number of red blood cells than there is in the percentage

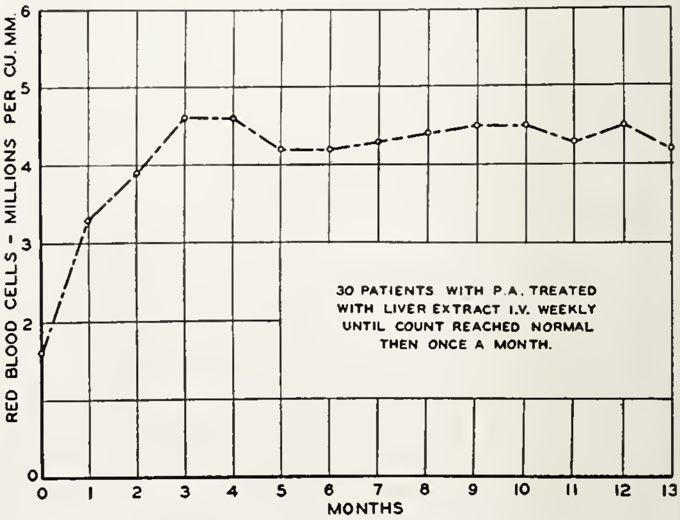


Chart 2.—Average rate of increase in numbers of red blood cells in patients treated with liver extract intravenously, each dose representing 100 grams of fresh liver.

of hemoglobin. As a result of this the color index usually falls below 1.0 and may remain there for a considerable period of time. In such patients, apparently, the condition may be corrected by the administration of such a preparation as ferrum reductum 0.5 gram three times a day. In some patients, and perhaps all, a continuation of the liver or stomach therapy alone might eventually produce the same result.

THE EFFECT OF TREATMENT ON THE CHANGES IN THE NERVOUS SYSTEM

The changes in the nervous system associated with pernicious anemia now constitute the major problem in the treatment of this disease. Certainly the improvement in the neurologic manifestations is far less striking than that observed in the symptoms directly referable to the anemia. Opinion concerning the efficacy of liver or stomach therapy on the changes in the nervous system is divided among competent observers, which is a clear indication that the desired results are not regularly obtained. Even casual observation of a large group of patients furnishes abundant evidence that the present method of therapy is not as effective as had been hoped for when the treatment was introduced. This is substantiated by the observation that a larger percentage of patients with advanced nervous lesions are referred for treatment at our clinic than were usually observed in any group of patients recorded as studied a decade ago. It is logical to assume that this results because, theoretically, a patient may survive the blood condition indefinitely when undergoing the proper treatment and this may permit an additional period of time to intervene in which changes in the nervous system may occur.

A critical survey of the known facts concerning the nervous system involvement in pernicious anemia indicates that the change is a degenerative one, consisting of a diffuse loss of myelin. This occurs chiefly in the posterior and lateral columns of the spinal cord, but also involves the peripheral nerves. Castle emphasized that a similar change occurs in pellagra, and suggested that the change in the spinal cord in patients with pernicious anemia may be due to a deficiency of the antineuritic portion by vitamin B, which is associated in some way with the persistent achlorhydria. Fouts et al.,[18] however, recently studied the effects of the injection of vitamin B intravenously in these patients with neurologic manifestations and concluded that improvement did not follow this form of treatment when administered for periods varying from one to over seven months.

While Castle[4] has demonstrated conclusively the etiologic relationship between the stomach defect and the anemia of pernicious anemia, and it is logical to assume an etiologic relationship between it and the nervous system, yet there is no conclusive evidence of this at the present time. While no one has reported the presence or absence of the intrinsic (anti-anemic) factor in the gastric juice of patients with subacute combined degeneration of the cord and a normal peripheral blood, it appears reasonable to assume that it is present under these circumstances because of the nondevelopment of a macrocytic anemia. If this is true, then the condition responsible for changes in the nervous system differs from that causing the anemia, although the stomach may be concerned with the cause of both conditions.

University of Michigan, Ann Arbor.

REFERENCES

1. Connheim, J.: Erkrankung des Knochenmarksbei pernicioser Anamie, Virchow's Arch. f. Path. Anat., 68:291, 1876.

2. Hunter, William: Severest Anemias, 1:144, 1909. Macmillan & Company, London.

3. Peabody, Francis W.: The Pathology of the Bone Marrow in Pernicious Anemia, Am. J. of Path., 3:179, 1927.

4. Castle, William B.: Observations on the Etiologic Relationship of Achylia Gastrica to Pernicious Anemia. I. The Effect of the Administration to Patients with Pernicious Anemia of the Contents of the Normal Human Stomach Recovered after the Ingestion of Beef Muscle, Am. J. Med. Sc., 178:748, 1929.

5. Minot, George R., and Murphy, William P.: Treatment of Pernicious Anemia by a Special Diet, J. A. M. A., 87:470, 1926.

6. Sturgis, Cyrus C., and Isaacs, Raphael: Clinical and Experimental Observations on the Treatment of Pernicious Anemia with Desiccated Stomach and with Liver Extract, Ann. of Int. Med., 5:2, 131, 1931.

7. Strauss, M. B., and Castle, William B.: The Nature of the Extrinsic Factor of the Deficiency State in Pernicious Anemia and in Related Macrocytic Anemias, N. E. Med. Jour., 2:55, 1932.

8. Goldhamer, S. Milton: Liver Extract Therapy in Cirrhosis of the Liver—Relation of Liver Dysfunction to Nonstorage of "Anti-anemic" Substance in Producing a Pernicious Anemia-like Blood Picture in a Patient Secreting Free Hydrochloric Acid, Arch. of Int. Med. (In press.)

9. Cohn, E. J., McMeekin, T. L., and Minot, G. R.: The Nature of the Material Effective in Pernicious Anemia, Am. J. Physiol., 90:316, 1929.

10. Castle, William B., and Taylor, F. H. L.: Intravenous Use of Liver Extract—Maximal Response of Reticulocytes from a Single Injection Derived from One Hundred Grams of Liver—Preliminary Communication, J. A. M. A., 96:1198, 1931.

11. Isaacs, Raphael, Sturgis, Cyrus C., Goldhamer, S. M., and Bethell, F. H.: The Use of Liver Extract Intravenously in the Treatment of Pernicious Anemia, J. A. M. A., 100:629, 1933.

12. Gansslen, M.: Ein wirksamer injizierbarer Leberextrakt, Verh. der Deutsch. Gesellschaft f. inn. Med., Zwölfter Kongress, Wiesbaden, 1930.

13. Strauss, M. B., Taylor, F. H. L., and Castle, W. B.: Intramuscular Use of Liver Extract—Maximal Responses of Reticulocytes from Daily Intramuscular Injection of Extract Derived from Ten Grams of Liver, J. A. M. A., 97:313, 1931.

14. Murphy, William P.: The Parenteral Use of Liver Extract in Pernicious Anemia, J. A. M. A., 98:1051, 1932.

15. Connery, J. E., and Goldwater, L. J.: Parenteral Use of Liver Extract in Treatment of Pernicious Anemia, J. A. M. A., 98:1060, 1932.

16. Morris, Roger S., Schiff, Leon, Burger, George, and Sherman, James E.: The Hematopoietic Response in Pernicious Anemia Following the Intramuscular Injection of Gastric Juice, Am. J. of Med. Sc., 174:6, 778, 1932.

17. Sturgis, Cyrus C., and Isaacs, Raphael: Desiccated Stomach in the Treatment of Pernicious Anemia, J. A. M. A., 93:747, 1929.

18. Fouts, P. J., Kempf, G. F., Greene, J. A., and Zerfas, L. G.: Vitamin B, Intravenously, for the Treatment of Neurological Changes in Pernicious Anemia, J. Ind. State Med. Assn., 25:448, 1932.

SOME OBSERVATIONS ON THE ALTERED PHYSIOLOGY OF HYPOPHYSECTOMIZED ALBINO RATS*

By HOWARD A. BALL, M. D.
San Diego

> "If you can measure that of which you speak and can express it by a number, you know something of your subject; but if you cannot measure it, your knowledge is meager and unsatisfactory." —Lord Kelvin.

GENERAL STATEMENT. The basic means of ascertaining the function of an endocrine gland is to completely remove it and study the effects of such removal. This has been done experimentally with thyroid, parathyroids, ovaries, testes, pancreas and adrenals, as well as other organs of disputed endocrine relationship. A very great amount of knowledge has resulted that has become of practical value to the medical practitioner, while certain phases are of interest chiefly to the research worker.

Comparatively recently a method of removing the hypophysis in the rat was described by Smith,[4] thus opening the field to a study of the function of this gland. Certain observations concerning the anatomical changes following removal of the hypophysis in experimental animals have been made by various workers. Not a great deal of resultant functional irregularity had been recorded. This report deals primarily with altered physiological responses in hypophysectomized albino rats, but a brief résumé of anatomical changes is presented in order that the results reported may be interpreted more satisfactorily.

ANATOMICAL CHANGES

Atrophy of the thyroid, the adrenals, and the genital system is an inevitable consequence of complete removal of the pituitary gland. Growth ceases and a progressive loss of weight occurs. If the gland is removed before sexual maturity, that event never occurs. Such animals remain infantile in sexual as well as in bodily development. If the gland is removed after maturity, an atrophy of the sex organs occurs.

The fact that obesity does not occur in these animals is worth more than passing notice, since this fact casts more than a little doubt upon what is popularly known to clinicians as "pituitary obesity." Injury to the hypothalamic region in experimental animals can produce marked obesity, but not simple removal of the pituitary gland. It may also be mentioned that no significant hair loss occurs which can be considered parallel to the alopecia which has been suggested to be due to pituitary deficiency.[2]

ALTERED PHYSIOLOGY

A lowered basal metabolic rate results from thyroid atrophy, and a cessation of estrus results from an absence of the sex stimulating factor of the pituitary gland. Male animals are incapable of copulation and the testes recede into the abdominal cavity. Ovaries become atrophic, presumably from lack of stimulation by the sex principle of the pituitary. Growth ceases from lack of the growth hormone of this gland. These findings have been reported previously. Reported here as new observations are:

1. Measurement of food and water intake.
2. Average weight loss curve.
3. Assay of thyroid activity.
4. Measurement of decrease in "body resistance."
5. Sugar tolerance curves.

EXPERIMENTAL CONDITIONS

Animals varying in age and sex were hypophysectomized following the method described by P. E. Smith, with a slight modification. The operation consists essentially of visualizing the hypophysis through a ventral approach exposing the sphenoid bone which is then trephined, with subsequent removal of the gland by suction through a capillary tube. The animals that survive the operation either succumb within the first twenty-four hours or recover and act normally about the third day after operation. At present, in the author's hands, only slightly more than 50 per cent of animals operated upon become available for experimental use.

Those animals used for assay of thyroid activity were prepared for operation by the use of picric acid in the operative field to obviate any stimulating effect of iodin on the thyroid gland. Picric acid has advantages over iodin and is now used as routine preparation.

Water intake measurements were made from the ordinary 180 cubic centimeters pharmaceutical bottles, graduated at intervals of 10 cubic centimeters. Five to seven animals per cage was the usual condition for this work.

Preparation for sugar tolerance tests consisted only of a twenty-four or forty-eight-hour fast without restriction of water.

All sugar determinations were made by the author, using a modified Folin method described by Jeghers.[3] The animals were weighed, and one gram of glucose for every 100 grams body weight introduced by stomach tube in a 50 per cent solution. Blood samples were obtained by clipping the tail with scissors at one, two, three, five, and in some instances seven hours.

Sexes have been equalized in the experimental groups, and no effect due to sex has been apparent. It will therefore be understood without further mention in the discussions which follow.

All animals that died were autopsied, to check on the completeness of pituitary removal. All others were judged on the basis of the weight curve, certainly a very reliable method, as will appear later.

FOOD AND WATER INTAKE

The water intake in hypophysectomized animals becomes of interest in connection with a consideration of the disease, diabetes insipidus. If the

---

* This paper was submitted under the nom de plume "Lord Kelvin," and was awarded the California Medical Association Research Prize of $150 at the sixty-second annual session of the California Medical Association, Del Monte, April 24-27, 1933.

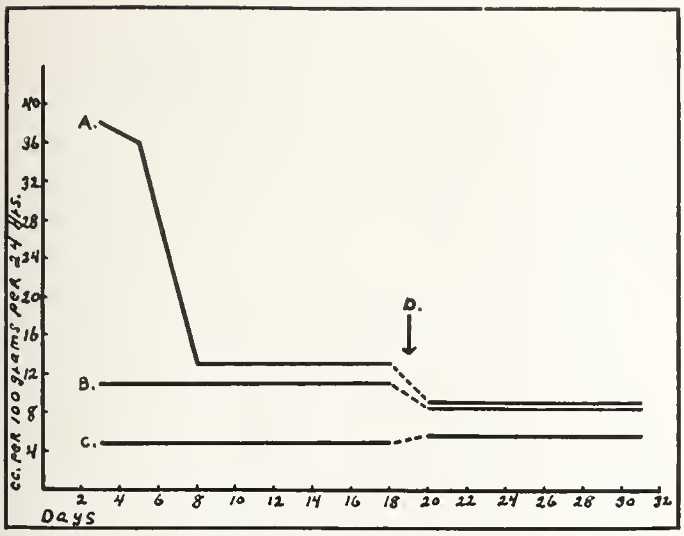


Chart 1.—Water intake in cubic centimeters per 100 grams body weight per twenty-four hours: A. eight recently hypophysectomized animals; first observation on third postoperative day; B, seven hypophysectomized animals from five to eight weeks following operation; C, five control animals; D, interval used for fasting and sugar-tolerance tests.

pituitary gland is an essential factor in the production of this disease there should be some disturbance of water metabolism when the gland is removed. This we find to be the case. The third day following operation the intake of water per 100 grams body weight per twenty-four hours averages eight times that of normal animals kept under identical conditions, and almost an equal amount above a group of animals in which a "fake" operation was done, consisting of all the steps in the regular operation, including the removal of the bone plate and visualizing the gland, but not aspirating it. This rules out the operative procedure or the anesthetic as factors in the increased water intake. From the third day through the next five to eight, there is a fairly rapid decrease in intake in the truly hypophysectomized animals until a level is reached where the intake is just short of three times (270 per cent) that of normal animals, and here it seems to remain fairly constant. Alteration downward did occur following sugar tolerance tests, but the level of intake even then was considerably above the normal (160 per cent) (see Chart 1). Other series of animals have shown similar results, but occasionally to a considerably lesser degree. Group B in the chart represents the intake of a combined group of seven hypophysectomized animals observed five and eight weeks following operation, indicating a continuance of this high intake.

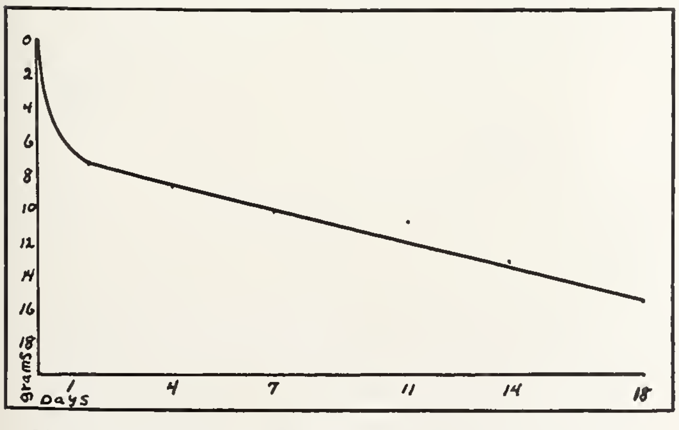


Chart 2.—Weight-loss curve of twenty-eight hypophysectomized animals. Days indicated are postoperative days.

It may be mentioned as an incomplete observation that several animals in which removal of the gland was not complete showed a persistent water intake at a high level similar to the intake of the animals directly after complete operation. This suggests that incomplete removal may have a more profound effect on water metabolism than complete removal.

The intake of food is not altered to a degree which would seem to be significant, but if a reliable difference exists it is in the direction of a lessened intake in the hypophysectomized animals. The average difference observed in the series under consideration varied from .6 to 2.3 grams per 100 grams body weight per twenty-four hours. These observations were made in ordinary cages with feeding cups designed to prevent waste, but the differences obtained during this period of observation are not sufficiently great as to be significant under the above conditions.

The point that is significant is the fact that in the face of a greatly increased water intake, and excretion (since the animals do not gain weight), food intake is not increased. It makes it more certain that the type of disturbed water metabolism we are dealing with is similar to that of diabetes insipidus rather than diabetes mellitus, though it will be shown later that there is a distinct change in the ability of the body to utilize sugar.

CURVE OF WEIGHT LOSS

Following removal of the pituitary there is usually a loss of weight of several grams, attributable to the operative procedure. Those animals in which a complete removal has not been effected usually exceed their immediate postoperative weight within a week. Occasionally animals, even with complete removal, do not lose weight before four days after operation. This may perhaps be accounted for by the increased water intake, some of which is retained. A progressive loss of weight occurs from this point on. A composite graph of average weight loss in a series of twenty-eight unselected hypophysectomized animals, composed of thirteen males and fifteen females, is presented in Chart 2. After the fourth day this shows an average weight loss of .5 gram per day. This chart covers a period of three weeks, at which time most of the animals were used experimentally, but past observations indicate that a similar weight loss continues. In this connection the question arises as to the part played by the growth hormone of the hypophysis in maintaining body weight. It is essential for increases in weight in the growing animal, and the immature hypophysectomized animal responds to its injection with rapid gains in weight. Its absence may account for the progressive loss of weight in these animals, an explanation that seems likely. Even assuming the foregoing suggestion to be true, it becomes impossible at the present time to be certain what part, if any, this endocrine principle may have in regulating the body weight of adult animals.

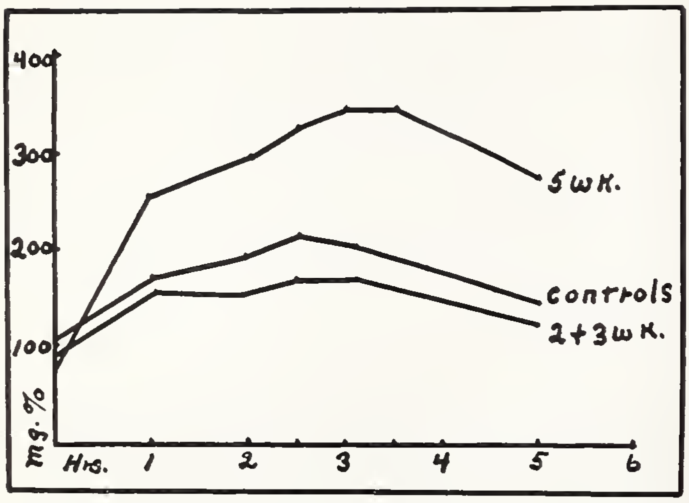


Chart 3.—Sugar tolerance curves. Weeks refer to elapsed time following hypophysectomy. The five-week group comprised eight animals, the two and three-week group twelve animals. Control curve represents nine tests on five animals.

ASSAY OF THYROID ACTIVITY

This work was carried on in collaboration with Doctors B. M. Allen and Leo T. Samuels, and is mentioned here through their courtesy. The detailed study is to be recorded elsewhere, and the following is but a summary of the experiment. Since the thyroid gland atrophies following removal of the pituitary, it becomes important to know its functional capacity. Is the potency of the thyroid decreased as well as its size, or does the potency remain unchanged and only a decrease in size occur? We believe this question has been answered thus: Weight for weight the thyroid gland of the hypophysectomized animal is as potent biologically as the thyroid substance of a normal animal.

The thyroid glands used were removed from the control and test animals, immediately frozen, desiccated and weighed, and their potency determined, using the metamorphosis of the tadpole as the indicator.

DECREASE IN BODY RESISTANCE

The term "body resistance" is used for want of a more accurate or descriptive term. It is used to indicate the ability of the body to resist insult, whether it be infectious, toxic, or otherwise.

It had been noticed that these hypophysectomized animals developed otitis media and pneumonia much more frequently than normal animals kept under identical conditions. It had also been noted that when Walker Sarcoma No. 256 was transplanted into these animals the tumors grew to be only one-sixth as large by weight as those in control animals.[1] Despite the fact that these animals supported only one-sixth the amount of tumor tissue as that supported by the controls, the length of life did not extend beyond that of the control animals.

These observations indicated a decrease in the resistance of the hypophysectomized animal. To measure this decrease in one of its aspects, the following was done:

Crystalline cobra venom was dissolved in normal saline to make a 10 milligram per cent solution, and injections made intraperitoneally to determine the minimal lethal dose for normal and hypophysectomized animals. It was found that .75 cubic centimeters of this solution per 100 grams body weight was lethal, irrespective of wide variations in body weight, in fourteen out of eighteen control animals so treated. (Of five animals given .66 cubic centimeters per 100 grams, four survived and one died.) Preliminary observations indicated an increased sensitivity to such treatment in hypophysectomized animals. Two-thirds the minimal lethal dose established for the controls was found to be lethal for hypophysectomized animals, killing twelve out of fifteen so treated (.5 cubic centimeters per 100 grams weight). The survival period following injection averaged five hours in each group. If one appraises the fact that hypophysectomized animals have less body fat than normal animals, it becomes apparent that the difference is even greater than that indicated by the figures. Eight of these hypophysectomized animals were given thyroid substance by mouth twice weekly in liberal doses to rule out thyroid atrophy as an important factor in the phenomenon. Thyroid feeding does not change the level of tolerance to cobra venom in these animals, and the cause of this decreased resistance must be sought elsewhere. Attempts to raise the tolerance of these animals by administration of the adrenal cortex extract eschatin have thus far failed.

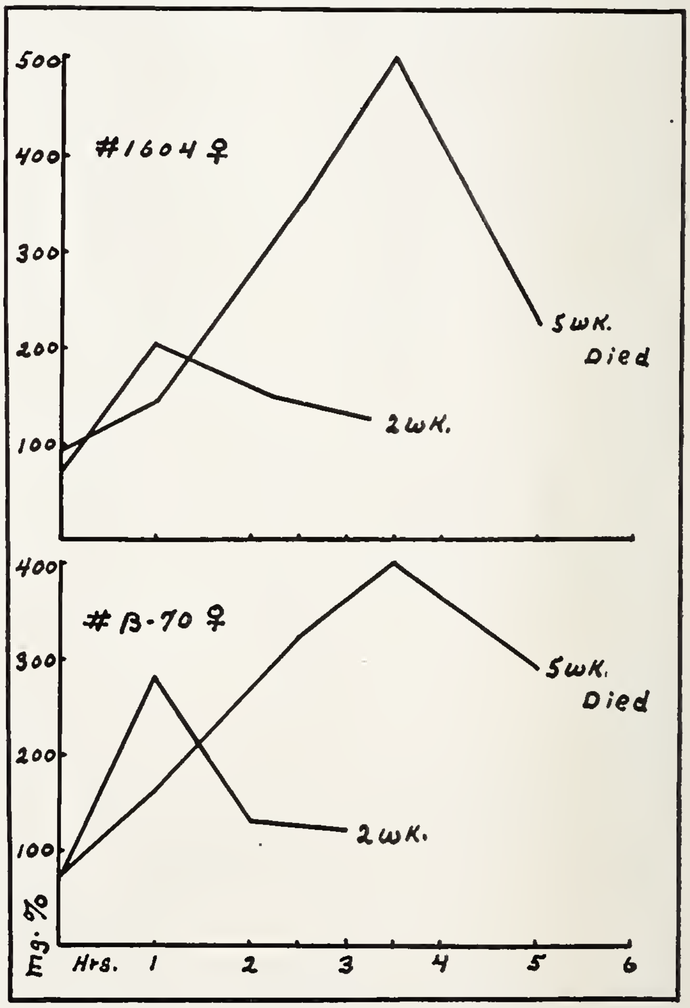


Chart 4.—Individual responses of two animals two and five weeks after hypophysectomy, showing radical change. All experimental conditions identical on both occasions.

An additional evidence of lowered body resistance in these animals was incidentally apparent during the experiments on sugar tolerance about to be described. This procedure makes all of the animals sick, and a high proportion of hypophysectomized animals succumb. Thus, in our series to date, thirty-two tests on seventeen hypophysectomized animals resulted in death for eleven, whereas in fourteen tests on five normal animals, death came to but one. This is a difference of one death for every three tests in the hypophysectomized animals, and one for every fourteen in the controls.

Plans for studies in other phases of immunity than that detailed above were made, but had to be abandoned because of lack of funds for the rather costly work in developing immunity.

SUGAR TOLERANCE CURVES

The sugar curves presented here were obtained from seventeen hypophysectomized animals. Five normal animals were used as controls. The results indicate a change in reaction, depending upon the lapse of time following operation. Thus at two and three weeks there is a distinct increase in the ability of the body to utilize sugar, while at five weeks and upward the reverse is true, the inability becoming progressive.

These changes would seem to indicate that insulin was more readily available two to three weeks after operation than in normal animals, but that at the end of five weeks and onward insulin could not be made available in sufficient quantities to hold the blood sugar even near the normal curve. The charts presented are average curves of groups sufficiently large to be significant. Only rarely did an individual animal deviate from the general trend of the group.

Chart 3 presents average curves of eight animals five weeks after removal of the gland, twelve animals from two to three weeks after operation, and a control curve of nine tests on five normal animals.

Chart 4 gives as an illustration the difference in reaction of two animals at two and five weeks after hypophysectomy, indicating that the changes may be very extreme during this span of time.

One other item of significance is that the fasting sugar level in the hypophysectomized animals is, with but few exceptions, considerably below the lowest figures for the control animals. This would suggest, as a possible explanation, glycogen depletion of liver and muscles.

Most animals that succumb during this test do so within six hours after the introduction of glucose into the fasting stomach. They become "dopy," breathe slowly, lose the ability to walk, and die gradually. A very high blood sugar is found at death. Death occurs in so short a time as to make acidosis at best an awkward explanation, particularly because of the abundance of sugar available, though they seem to have many of the symptoms of coma. It seems as though the presence of a high blood sugar is in itself deleterious. It is certain that some increase in blood viscosity occurs, for in these animals, as occasionally in others, it became impossible to obtain blood from the tail no matter how short it was severed.

CONCLUSIONS

1. Water intake is persistently increased in hypophysectomized animals. This ranged from eight times the normal, following operation, to 2.5 times the normal five and eight weeks following operation in the group reported, and probably continues. Food intake in this series was not significantly altered.

2. A progressive weight loss of approximately .5 gram per day occurred in a group of twenty-eight hypophysectomized animals between the fourth and twenty-first days after operation, and continues at about the same rate.

3. Weight for weight, the biologic potency of the thyroid tissue of hypophysectomized animals is equivalent to that of normal animals, but there is less of it.

4. In several respects hypophysectomized animals show a measurable decrease in the ability of the body to resist insult.

5. An increase in the ability of the hypophysectomized animal to utilize sugar occurs two weeks following removal of the gland, with a reversal at five weeks. From this point the decreased tolerance appears to become progressive.

4241 Hilldale Road.

REFERENCES

1. Ball, H. A., Samuels, Leo T., and Simpson, W.: The Relation of the Hypophysis to the Growth of Malignant Tumors, Am. J. Cancer, 16:351 (March), 1932.

2. Bengston, B. N.: Pituitary Therapy of Alopecia, J. A. M. A., 97:1355 (Nov. 7), 1931.

3. Jeghers. H. J., and Myers, V. C.: A Reduction in the Amount of Blood Required for the Folin Micro-blood Sugar Method, J. Lab. and Clin. Med., 15:982 (July), 1930.

4. Smith, P. E.: Hypophysectomy and Replacement Therapy in the Rat, Am. J. Anat., 45:205, 1930.

LIVING GRAFTS OF ENDOCRINE GLANDS*

By Harvey B. Stone, M. D.
James C. Owings, M. D.
and
George O. Gey, B. S.
Baltimore, Maryland

III†

COMMENT ON TWO CLINICAL CASES

We are fortunate in that recently we have had two clinical cases that offered unusual experimental opportunities—a case of Paget's disease, and one of surgical parathyroid tetany. The case of Paget's disease was operated upon because we hoped to find a hypertrophy or an adenoma of the parathyroids. At operation the parathyroids showed no gross pathologic changes, but because of the patient's condition one parathyroid was removed for study and its possible use for grafting. Sections of this gland showed no evidence of pathology. About nine-tenths of the gland was maintained by tissue cultures, some of which were grown on slides in the usual manner and the rest in tiny flasks. For the first two weeks a medium was used which contained the serum of the patient from whom the gland had been removed. The plasmatic medium was prepared in the usual way and also contained the beef embryo juice, which likewise was used in the animal experiments. Growth of the tissue was very rapid and liquefaction was troublesome, making it necessary to change the medium frequently. At this point it was decided to transfer this cultured material into a medium containing the fluids of the patient suffering from parathyroid tetany. Therefore she was bled when necessary and her serum and plasma used for a period of four weeks in the culture media of the growing human parathyroid. The growth of the tissue in this foreign medium was just about as rapid as it had been previously, but there was less liquefaction. The liquefaction fluid produced while the tissue was in the serum of the donor had a pH of 6.9 and was saved and kept in the refrigerator. That produced while it was in the serum of the recipient was saved separately in the same manner, and both fluids, through the courtesy of Doctor Schelling of the Harriet Lane Home, were tested for their content of parathyroid secretion. The method that he used was the effect of these solutions on the calcification of the bones of young rats. These experiments were negative, as might have been expected, had we known of the experiments of W. J. Allerdyce,[5] whose work showed that tissue enzymes destroy parathormone almost as fast as it is formed, especially if allowed to stand in contact with them. At the end of the four-week period on February 17, 1933, the tissue cultures were transplanted into the areolar tissue of the axilla of the patient with tetany. This patient into whom they were transplanted has been suffering with tetany in a latent form for over sixteen months following thyroidectomy without any apparent improvement, and goes into active tetany at the beginning of each menstrual period. At the time that the transplantation was done, her calcium was 6.80 (milligrams per 100 cubic centimeters) and phosphorus was 5.61. She had a positive Trousseau in sixty seconds, and a positive Chvostek. Four days previous to the time of transplantation she had had an attack of active tetany so severe that she was unconscious for nearly half an hour. One week previous to the implantation of the graft her calcium was 6.62 (February 3), but phosphorus was not done. On January 27 her calcium had been 4.94; but in spite of this low calcium she was feeling quite well. The end-results of this experiment will have to be reported later.

---

* From the Surgical Hunterian and Surgical Pathology Laboratories, Department of Surgery, Johns Hopkins University.

* Guest-speaker paper read before the general meeting of the California Medical Association at the sixty-second annual session, Del Monte, April 24-27, 1933.

† Part I of this article was printed in California and Western Medicine, June, 1933, page 409; Part II, July, page 10.

PLANS CONCERNING PRESENT AND FUTURE STUDIES

Again repeating that this paper is a preliminary report, we wish to set forth the lines along which our present work is continuing and our future plans are laid. Thus far we have used only two of the ductless glands for grafting experiments—the thyroid and the parathyroid—and with each have had at least a measure of success. It is our purpose to extend this study to include grafting experiments with adrenal cortex, islands of Langerhans, hypophysis, and other endocrine organs. These will be dealt with in the same manner as thyroid and parathyroid. More basically important, we expect to try cross-species grafting by the same technique. In the earlier period of this work we tried various cat-dog grafts, before the development of the tissue culture adaptation to host serum method, with the uniform failure that others have reported. We recognize that because of the promise of our experiments in homografts within the same species, we have no justification to expect similar results in heterografts across species lines, yet it is certainly the next logical step in the extension of the method, and one of the greatest importance. Because it is obvious that if a method of successful cross-species grafting can be developed, the practical utility of its clinical application will be enormously enhanced. Another phase of investigation that has already been planned and started in preliminary fashion is the study of the specific chemical properties of the cells of endocrine glands while growing in cell cultures. It will be interesting certainly, and possibly of value, to know whether cell cultures of thyroid elaborate detectable amounts of thyroxin, for instance, or whether cultures of Langerhans' cells produce insulin *in vitro*. Among other opportunities that this method may offer is a way to test further Halsted's suggested law of deficiency as a requirement for successful endocrine grafts. It is very apparent that if a regularly successful technique of gland grafting is evolved, this suggestion of Doctor Halsted's can be readily submitted to conclusive experiment. There are further and more theoretical problems of general biology that suggest themselves as possible subjects for study by such a method. For instance, can we reproduce experimentally the diseases of glandular excess by grafting masses of tissue into normal animals? Can we study the supposed balance between endocrine glands by this method? We make bare mention of the obvious approach this may offer to the "rejuvenation" idea, so often and so basely exploited before. To the imagination of the clinician, less abstruse but more practical possibilities suggest themselves. As was stated in the beginning of this paper, the treatment of those disorders of the endocrine glands involving excess are dealt with on a principle that may fail in individual cases but that is sound and successful in general. The treatment of the deficiency disorders has made great progress recently, but it is still resting on an essentially unsatisfactory foundation—the administration of externally prepared chemical products. What a boon if we could replace the lacking products, not by repeated introduction from without, but by constant steady elaboration from within the body itself! What a triumph if we could give back to the myxedematous patient a working thyroid, to the diabetic a functioning insulin apparatus, and to all the other sufferers from endocrine insufficiencies the living tissues that would restore them to normal health and function! Surely this is a dream worth cherishing, and an attainment worth working for.

SUMMARY OF PRESENT CONCLUSIONS

But while we naturally and rightly cherish our dreams of future possibilities, we emphasize again that we are not deluded and wish to delude no one else as to the limited extent of our actual present results. It may be well to conclude this paper with a brief summary of our conclusions, and their meagerness will act as a correction to any overenthusiasm that may be inferred from the preceding paragraph.

1. The success of grafts of endocrine glands depends on at least three principal factors, and possibly others not yet known. Those factors are the site at which the graft is placed, the physical form of the grafted tissue, and the chemical adjustment of the graft to the host.

2. As concerns the site of the graft, it should be placed in a location of loose structure, free from pressure, near a good blood supply but not too vascular, and easy of access.

3. As concerns the physical form of the graft, it should be either in finely divided fragments of the original gland, or in the form of tissue cultures grown from the original gland. Such forms of graft permit the individual cells to come in close and quick contact with nutrient substances without depending at first upon the development of an organized blood supply.

4. The chemical adaptation of graft to host may be sought by growing the graft as a tissue culture in a medium made up from fluids of the host's body, thus providing an opportunity for preliminary adjustment of the graft to its future chemical environment.

5. By the observance of these requirements, in a series of experiments thus far not sufficient to be conclusive, a promising measure of success has been attained.

6. The subject as a whole is full of such great possibilities of clinical value and scientific interest that it deserves active and earnest prosecution.

18 West Franklin Street.

REFERENCES

1. Bernard, Claude: Lecons sur Liquides de L'Organisme, 2:408, Paris, 1859.

2. Halsted, W. S.: Operative Story of Goiter, Johns Hopkins Hospital Reports, Baltimore, 19:71-257, 1920.

3. Holman, E.: Surg., Gynec., and Obst., 38:100-106, 1924.

4. Halsted, W. S.: Auto- and Isotransplantations in Dogs of the Parathyroid Glandules, J. Exper. Med., Lancaster, Pa., 11:175-199, 1909.

5. Allerdyce, W. J.: Am. J. Physiol., Vol. 99, 1931.

THE KNEE JOINT—ITS FUNCTIONAL ANATOMY AND THE MECHANISM OF CERTAIN INJURIES*

By John B. deC. M. Saunders, M. B., F. R. C. S. (Edin.)
San Francisco

Any consideration of the functional anatomy of the knee joint and of the mechanism of injury, historically, focuses attention on the work of four men. One hundred and fifty years ago William Hey[1] of Leeds recognized clinically and treated successfully the condition known as internal derangement of the knee joint, and was the first medical man to invade this province of the bone setter. To Edinburgh we turn for the work of the other three. There, John Goodsir,[2] the master anatomist, carried out his remarkable work on the mechanism of the knee joint while professor of anatomy during the years 1846-67. To his demonstrator, Thomas Annandale, who succeeded Lister as professor of surgery in Edinburgh, fell the distinction of performing the first operation for a tear of the semilunar cartilage. This operation was performed in 1883, just fifty years ago, and was followed by the experimental work of Annandale's pupil, Scott Lang,[3] who carried out the earliest experiments on the mechanism of production of such internal derangements of the knee joint.

This paper is very largely an expression of personal opinion derived from repeated examinations of the knee joint, in health, in injury, and on the cadaver.

From time to time I have repeated much of the work of others and so I am very largely in agreement with their interpretations except in certain details. It is not possible in such a short discourse to enter into a critical examination of the literature, nevertheless wherever I have cited others I have personally verified and agree with their opinions.

THE KNEE JOINT STRUCTURE AND MOVEMENTS

The knee joint is a double articulation enclosed in a common synovial membrane. Of these two articulations the chief is that which occurs between the femur and the tibia, which also is in itself double. The articulation between patella and femur will not be discussed in this discourse; and in what follows, knee joint refers arbitrarily to the tibiofemoral joint.

The knee joint, classed as a freely movable or diarthrodial joint, conforms to a general principle which is characteristic of most, if not all, such diarthrodial joints. This principle is exhibited in a dual function of the articular surfaces. Diarthrodial joints, and especially those of the lower extremity, must subserve two purposes. As Walmsley,[4] following Goodsir,[2] puts it, the first is the transmission of body weight through a temporarily stabilized couple, the components of which are displaceable; and the second is the free movement of the components on one another by the action of the related muscles. Stabilization of a joint is brought about when the joint surfaces are largely in contact with one another and fully congruent, the joint being converted in a functional sense from a diarthrosis to a synarthrosis (Walmsley[4]). It is this congruity of surfaces which occurs in joints when they are said to be screwed home or locked in the position for weight transmission. The articular surfaces of the knee joint become most fully congruent in complete extension, which is the position of "stable equilibrium" for that joint. We find, therefore, that anything which interferes with this full congruence leads to one of the causes of instability described by the patient subjectively as a "weakness" in the joint.

---

* From the department of anatomy, University of California Medical School, San Francisco.

In the next phase, the phase of movement, the articulating surfaces are incongruous, a functional relationship of the greatest importance, as Goodsir[2] showed. By this means, joint surfaces when in motion are part in action and part at rest, which allows of reparation and nutrition. This mechanism is evident in the knee joint and is enhanced by the action of the menisci, as will be discussed below.

The movements of the knee joint are primarily those of flexion and extension, but an important rotatory movement occurs in conjunction. These movements are related to the shape of the articular surfaces and are controlled by and associated with the ligaments, menisci and muscles. The femoral condyles in passing from flexion to extension do not roll upon the condyles of the tibia; if they did, the femur would have a progressive forward movement which would eventually end by the femur rolling completely off the tibia. Therefore, with the tibia fixed, as in walking, the femoral condyles in extension must slip or "skid" progressively backward, as does the locked wheel of a vehicle skidding on a slippery surface, with a continued forward momentum.

The effect of this backward skidding of the femoral condyles, which of course is only relative, is to alter the relationship of the fixed points of attachment of the collateral ligaments. Taking the tibia as fixed, the superior attachments of these ligaments are carried further backward and upward; that is, the distance between these fixed points of attachment is increased, so that these ligaments become progressively more taut, a part of the mechanism to stabilize the knee joint in extension. The rotation which completes extension enhances this effect. As the medial meniscus is attached to the tibial collateral ligament, tightening of this ligament in extension serves partly to draw the meniscus out of the pathway of the oncoming condyle. This mechanism is important in internal derangements. The tibial collateral ligament is invariably damaged, whether alone or with other ligaments, when undue lateral mobility or rotation occurs with the joint in full extension—a relationship which will be considered in the discussion on the cruciate ligaments.

The long axis of the tibial surface of the medial femoral condyle is set at an angle of some 15 degrees to the anteroposterior vertical plane. This surface forms part of an arc of a circle whose center is lateral to the knee joint and whose radius is about six inches in length; so that, with the tibia fixed, when extension occurs this movement becomes complicated by one of medial rotation of the femur on the tibia, the articular surfaces following their axes. This movement of medial rotation commences early, but becomes progressively more evident as full extension is approached. As the center of this rotatory movement lies lateral to the lateral femoral condyle, this condyle, being within the circle of this movement, has to "mark time" for the medial femoral condyle. Therefore the lateral meniscus is more nearly a circle to provide for this pivotal action. The medial rotation of the femur on the tibia in full extension renders the articular surfaces and menisci fully congruent with one another, and the knee is in a position of stability for weight transmission and is said to be screwed home or locked. Full extension at the hip likewise screws home that joint in full congruence, so that in the erect posture a stable column for weight transmission is formed from trunk to ground (Walmsley[4]). The limb, with joints in stable equilibrium, supported by tightened ligaments, assisted by muscle tonus and gravity, forms a rigid but resilient column for the support of the superincumbent weight, with a minimum of muscular effort. Release of this lock in walking is effected by tilting forward of the body at the pelvis to undo the hip joint and by the action of the popliteus muscle in producing lateral rotation of the femur at the knee. The popliteus muscle can, therefore, be looked upon as the "priming" which sets the knee joint in motion.

FUNCTION OF THE MENISCI

It is usually said that the function of the menisci is to compensate for the incongruity and, by movement, to pack the opposed femoral and tibial surfaces. That this is not the case is evident to anyone who has examined these cartilages during movement. As already mentioned, they are fully congruous in only one position of the joint, namely, in full extension when the joint is stabilized for weight transmission. In movement, they tend to increase the disparity between the surfaces and set themselves to form cuneiform spaces between the moving parts. MacConaill[5] has recently given a new and most satisfactory interpretation of the function of such articular disks as found in joints. By reference to the theory of lubrication, he has shown that intra-articular cartilages relate primarily to the synovial fluid, rather than to the articular surfaces of the bones. The menisci, by the production of such cuneiform spaces, create a positive pressure of synovial fluid between the opposed surfaces and so prevent their premature approximation. In this manner they play an active rather than a passive part. MacConaill[5] makes an interesting comparison between the menisci of the knee joint and the so-called Mitchell thrust pads. The Mitchell thrust pads are a refinement of marine engineering and are employed when thrusts are to be carried by a film of lubricant during motions in which there is a considerable element of gliding, and in which a screw-like movement along the axis of thrust is discouraged. Such pads or menisci increase the efficiency of joints in the higher ranges of motion and, therefore, surgical removal of a portion of a meniscus does not, under ordinary circumstances, lead to symptoms. In fact, there is often an incomplete fibrous replacement of the cartilage after removal which tends to restore the normal condition, and which may in turn be injured, giving rise to diagnostic difficulty. In many cases removal leads to the development of osteoarthritic changes from increased friction. Furthermore, the argument that these intra-articular disks are but vestigial remnants is not borne out by the facts of comparative anatomy which, on the contrary, shows them to be new mammalian acquisitions.

Experimentally, it is not difficult to see how lesions of the menisci are produced, and there are several maneuvers which will cause such lesions. In flexion, the lateral cartilage moves backward as a whole and becomes more nearly circular. The anterior horn of the medial cartilage is drawn toward the center of the joint, and as this cartilage is fixed at about the center of its periphery to the deep aspect of the tibial collateral ligament, it is drawn exceedingly taut. Forcible lateral rotation of the leg increases this effect and may lead either to bodily displacement of the cartilage, or to tear of the cartilage at the junction of its mobile and fixed portions or to a tear of the "bucket-handle" type. As to whether the "bucket-handle" type results or not seems to depend upon the nature of the attachment of the anterior horn, which varies somewhat in different specimens. In this connection it may be of interest to record that the torn medial cartilage has been seen drawn across to the extreme lateral side of the joint, causing a confusion in diagnosis. On the other hand, sudden extension, combined with rotation, may tear the cartilage longitudinally and increase the damage to an already displaced or torn meniscus. Forcible medial rotation of the leg tends to damage the lateral cartilage, although this effect is variable. It is much more difficult to elucidate the mechanism of injury to the posterior parts of the cartilages. While I have not been able to produce such lesions on the cadaver, yet I have noted that the greatest stress would seem to be thrown on the posterior parts of these cartilages when the limb is forcibly rotated and then suddenly flexed to its maximum. Damage to the lateral cartilage is said to give rise to the "clicking" knee, and it is possible, with slight damage to the articular surface, to reproduce experimentally such clicks when the lateral cartilage is displaced.

THE CRUCIATE LIGAMENTS

The cruciate ligaments lie obliquely between the condyles of the femur and it is important to remember that they exist in part in the anteroposterior plane and in part in the mediolateral plane. Their disposition in the anteroposterior plane and their eccentric attachment account for the orthodox view that the anterior ligament tightens and limits extension, the posterior, flexion. Actually, however, both are taut in extension, because extension is complicated by rotation and because of the more extensive attachment of the posterior cruciate ligament. The disposition of these ligaments in the mediolateral plane is of great importance in guiding and controlling rotation of the leg, an effect supplemented by the oblique position of the oblique popliteal ligament. For this reason rupture of the anterior cruciate ligament, often associated with injury to the medial meniscus, is not attended later by loss of stability in the joint.

I have recently examined four cases in which there existed a rupture of the anterior cruciate ligament proved at operation. None of these exhibited any disability whatsoever, and in none was there any instability or increase in motion in any direction except for a slight increase in lateral rotation of the leg when the limb was flexed.

Pringle,[6] experimenting on the cadaver, reports similar results. This may be due to the fact that the oblique popliteal ligament is supplementary to the anterior crucial. Excessive mobility and instability occur only when this injury is accompanied by a rupture of the tibial collateral ligament. Pringle states that in those instances in which he succeeded in rupturing the anterior cruciate ligament on the cadaver he found, on examining the ligaments of the joint, that there was always a degree of tearing of the tibial collateral ligament at its deep or articular aspect, and that this tearing was incomplete, never involving the superficial fibers. This raises the question of the desirability of carrying out extensive and difficult reconstruction operations within the joint. I am not in favor of these, nor are they indicated except in cases of gross injury. Repair and reconstruction of the collateral ligaments seems, from my experience, to be the logical procedure, since in those cases that exhibit instability the lesion of importance is a tearing of the tibial collateral ligament and often of fibers which are deep and, therefore, not evident.

The posterior cruciate ligament is shorter, has much more extensive attachments and, therefore, its rupture is much rarer. This injury is more serious, is often complicated by extensive damage to other structures, and clinically permits of abnormal backward displacement of the tibia. It seems to be produced when the tibia is forcibly driven backward with knee in full flexion (Pagenstecher [7]). The ligament is safeguarded from rupture in full flexion by contact of calf with thigh.

The foregoing discourse is but a summary of the more salient features in the mechanism of the knee. Study, by experiment and dissection, is the only way to gain real appreciation of the action of this remarkable joint.

University of California Medical School.

REFERENCES

1. Hey, William: Quoted from Keith, A. Members of the Maimed. London, 1919.
2. Goodsir, John: Anatomical Memoirs, 2:220, 231, 246. Edinburgh, 1868.
3. Lang, W. Scott: Edinburgh Med. Jour., 1886-87.
4. Walmsley, T.: Jour. Bone and Joint Surg., 10:40, 1928.
5. MacConaill, M. A.: Jour. Anat., 66:210, 1931-32.
6. Pringle, J. H.: Annals of Surg., 46:169, 1907.
7. Pagenstecher: Deut. Med. Woch., 24:872, 1903.

PEPTIC ULCER—ITS ROENTGEN DIAGNOSIS*

By M. J. Geyman, M. D.
and
D. M. Clark, M. D.
Santa Barbara

Discussion *by Kenneth S. Davis, M. D., Los Angeles; R. G. Taylor, M. D., Los Angeles; Howard E. Ruggles, M. D., San Francisco.*

The advent of the opaque meal in 1898 ushered in a new era in the diagnosis of gastro-intestinal diseases. While the energizing apparatus and tubes of that time did permit the visualization and study of gross deformities, such as the filling defects produced by large fungating carcinomata, they were not adequate for the accurate demonstration of smaller lesions.

DIAGNOSTIC AIDS

The most important immediate benefit of the opaque meal was that it permitted investigation of the normal "living" anatomy of the stomach and disclosed the wide variation in size, tonus, outline, and location more truthfully and convincingly than the autopsy table. It further allowed observation of the dynamics of digestion, peristalsis, motility, and tonus in a far more graphic and effective manner than any method theretofore attempted.

A few years later Reiche[1] was successful in demonstrating the cavity or crater of a gastric ulcer; and in the following year Haudek's classical description of the niche proved the feasibility of the direct diagnosis of peptic ulcer. The percentage of cases in which the niche could be directly visualized, particularly in duodenal lesions, was of course relatively small. The secondary signs of ulcer had been carefully noted—hyperperistalsis, hypermotility, local spasm, six-hour gastric residue, etc.—and the result was an overemphasis on these secondary signs and only a half-hearted attempt at direct visualization of the lesion.

On the Continent the tendency inclined toward emphasizing the fluoroscopic technique in the detection of gastric and duodenal lesions, while in this country the less expert use of the fluoroscope was somewhat compensated for by multiple roentgenographic studies. Cole, particularly, pioneered the use of serial films, and the serialograph attained quite general use in America. A period ensued during and after the World War in which relatively little advance in gastro-intestinal diagnosis occurred. Then Forssell,[2] Akerlund,[3] and later Berg,[4] made use of various compression devices as a means of obtaining more detailed information concerning localized lesions. As far back as 1911 Haudek used a wooden spoon to squeeze out all but a thin coating of barium from the suspected area during fluoroscopic examination. By the use of certain devices Forssell and Akerlund and Berg, working independently, were successful in obtaining film studies with localized areas under compression.

Chaoul[5] had experimented in 1915 with a compression cylinder designed to allow more complete filling of the duodenal bulb. Later he used a compression balloon to express barium contents during roentgen study. A modification of this device is today recognized as perhaps the simplest, most inexpensive and efficient of the various devices used for obtaining roentgenographic studies with compression.[7, 8]

This work reached a high degree of perfection in Sweden and Germany before its value was appreciated in this country, due probably to the fact that it is a time-consuming procedure requiring considerable patience and experience. Even now this remarkably worthwhile refinement in gastro-intestinal diagnosis has been adopted by relatively few American roentgenologists.

Other factors which have contributed to the present degree of accuracy of roentgen diagnosis in general are improved transformers and tubes and the use of intensifying screens and speed films.

BASIS FOR GOOD ROENTGEN DIAGNOSIS

Regardless of the adequacy of equipment and the use of all the present-day refinements and supplementary procedures, it must be remembered that an accurate roentgen gastro-intestinal examination requires technical training, skill, and experience. The lack of any one of these requirements makes an examination not only of questionable value but may prove disastrous to the patient's welfare. Mistakes are unavoidable even among the most expert and experienced men, so the percentage of erroneous diagnoses in untrained hands can scarcely be estimated.

The only positive roentgen sign of peptic ulcer is the direct visualization of the ulcer niche. In gastric ulcer this is possible in a rather high percentage of cases (probably 90 per cent), but in duodenal ulcer, even with the most careful work and every advantage as to equipment and technique, the niche is visualized in only slightly more than 50 per cent of the cases. In a great many of the remaining cases, however, characteristic deformities and other signs, such as pyloric obstruction, warrant a definite diagnosis of ulcer. We believe that characteristic roentgen evidence of duodenal ulcer can be obtained in at least 95 per cent of patients having such lesions. Nevertheless a small group remains in which the roentgen findings are equivocal and it is in these cases that experience, clinical judgment, and an evaluation of indirect evidence, such as secondary roentgen signs, incidence of occurrence, etc., plays a tremendously important part.

Peptic ulcer may appear on any part of the gastro-intestinal mucosa that is bathed in gastric juice. Although they may occur at any point in the stomach or duodenum as far as the papilla of Vater, or even the cardiac end of the esophagus (regurgitation of gastric juice), they show a definite predilection for certain sites. From the standpoint of x-ray diagnosis, they may be conveniently divided into four classes:

---

* Read before the joint meeting of Radiology and General Medicine Sections of the California Medical Association at the sixty-first annual session, Pasadena, May 2-5, 1932.

1. Esophageal peptic ulcer;
2. Gastric ulcer;
3. Duodenal ulcer;
4. Gastrojejunal ulcer.

ESOPHAGEAL ULCER

Peptic ulcers of the esophagus are rare as compared to gastric and duodenal ulcer. They are often erroneously diagnosed at postmortem, due to reflux of gastric contents into the lower esophagus with postmortem digestion of the mucosa. Practically all of them are confined to the lower two inches of the esophagus and usually they are situated on the right posterolateral wall. They may be from three millimeters to two centimeters in diameter and are often of the penetrating type. They are best demonstrated in the vertical or supine position, with the patient in the right oblique. A thick barium mixture is more effective in most cases. There is usually an accompanying cardiospasm.

GASTRIC ULCER

A great many erroneous diagnoses of gastric ulcer may be obviated by an understanding of the sites of predilection. The vast majority of benign gastric ulcers occur on the lesser curvature, usually in the lower two-thirds, and in the pyloric canal. In many instances they may be situated well toward the posterior wall. For this reason studies in the oblique as well as frontal planes are necessary. The greater curvature is so rarely attacked that the question immediately arises as to the benignancy of any ulcerative lesion occurring there. Various explanations have been offered. Perhaps the most plausible is that food on entering the stomach proceeds along the lesser curvature which thereby receives the maximum trauma from roughage. Moreover, the mucosal lining is more loosely attached in the lesser curvature than in other parts of the stomach. Cole emphasizes the relatively deficient blood supply of the lesser curvature.

Lesser curvature ulcers may be demonstrated with a marked degree of consistency by the use of the full barium meal. In most instances they are readily seen on fluoroscopic examination. The use of the fractional meal in such cases has not met with uniform success because of the inaccessibility of some lesions to palpation, and because a certain amount of hydrostatic pressure is required to force the barium into the niche.

Ulcers in the pyloric canal can rarely be visualized directly. Their diagnosis rests on the finding of persistent pylorospasm with attenuation of the pylorus. In the untreated cases, complete obstruction with dilatation of the stomach may occur.

Posterior-wall ulcers, particularly those situated toward the cardiac end of the stomach, may be very difficult to discover. They are often of the flat type and cause marked clinical manifestations, yet go undiscovered even under the most careful roentgen examination.

A disturbingly frequent occurrence is the case presenting classical symptoms of peptic ulcer in which no evidence of niche can be demonstrated. It is in this group particularly that recognition and evaluation of the secondary roentgen signs of ulcer are important. Among the most significant of these are incisura and pylorospasm, increased peristalsis and motility, and five-hour gastric retention.

Incisura, when present and persistent after antispasmodics, has a fairly definite significance. It is usually approximately opposite the point of ulceration, but it may be at some distance above or below the level of the lesion. Incisura may also occur with extragastric pathology, such as appendicitis, diverticulitis, and cholecystitis.

Disturbances of peristalsis and motility are frequently the result of nervousness and gastric psychoses, and their significance should be carefully evaluated from this standpoint. They are commonly increased in peptic ulcer, and peristalsis is interrupted at the site of the lesion.

The importance of five-hour gastric residue has steadily declined to such an extent that in some of the larger clinics the motor meal has been abandoned. More or less gastric retention is commonly found in the large ptotic stomach of the asthenic type, and its presence here is of questionable import. It is frequently encountered in women during menstruation. Of more significance is the paradoxical gastric residue associated with hypermotility. Carman's opinion that this finding is pathognomonic of peptic ulcer seems untrue, however, in the light of present-day knowledge.

Beyond any doubt the most difficult part of the diagnosis of gastric ulcer lies in the establishing or ruling out of malignancy. All arguments considered, there seems no doubt that ulcers become malignant. Whether some are malignant from the start is beside the point. The statistics of the Mayo Clinic would indicate that something over six per cent of all gastric ulcers will become malignant, that 68 per cent of all gastric ulcers with a crater two centimeters in diameter are malignant, that practically all gastric ulcers with a crater over three centimeters in diameter are malignant. Although these figures have frequently been challenged on the grounds that they are obtained by a primarily surgical group and that the "single cell" basis of microscopic diagnosis has not been generally accepted by pathologists, the figures do represent a thorough study of an exceedingly large number of cases, and as such merit careful consideration. Gastric analysis and a test of therapy are frequently necessary to decide the issue.

DUODENAL ULCER

The duodenal cap is the commonest site of ulceration in the gastro-intestinal tract. The appearance of lesions in this region presents a somewhat different picture from that seen in gastric lesions roentgenologically demonstrable. This is largely due to the thinner strata of wall structures. Direct roentgen evidence of duodenal ulcer is of two types: deformity of bulb contour and niche or crater visualization, with or without contour deformity. Fixed deformities may be caused by

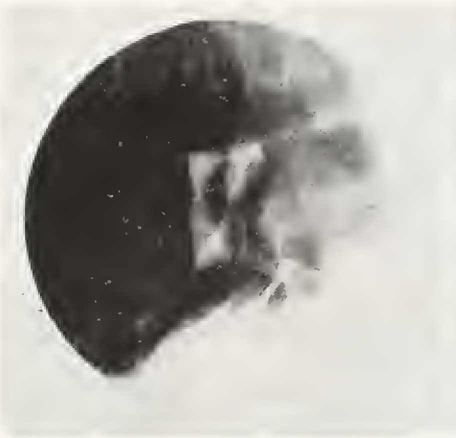


Fig. 1

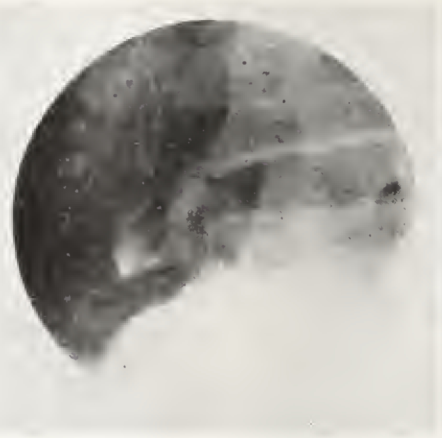


Fig. 2

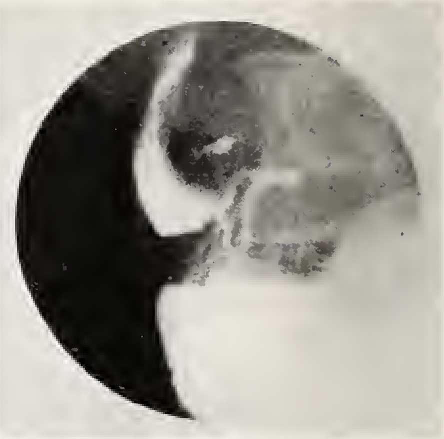


Fig. 3

Fig. 1.—Duodenal cap under compression showing ulcer niche with converging mucosal folds.
Fig. 2.—Same case after medical treatment, showing disappearance of niche.
Fig. 3.—Duodenal cap under compression, showing small ulcer niche. No contour deformity was visible in studies of the barium filled cap.

spasm or cicatricial changes and these occur in a variety of characteristic patterns. Niche evidence is roentgenologically shown as a spot of greater density due to deposition of barium particles in the crater of the ulcer. Niche sizes and patterns vary as greatly as do contour deformities. Previous to the extensive studies of Berg and Akerlund in the development of compression technique, the chief direct roentgen evidence of ulceration was based on deformities of bulb contour.

The value of compression technique lies in the fact that by its use the incidence of roentgenographic niche visualization is 30 to 40 per cent greater than that obtained by other procedures. Moreover, it permits an accurate estimate of the size and contour of a lesion and in some instances the extent of induration and the condition of the surrounding mucosa. Furthermore, two years of experience with this method have convinced us that the penetrating type of ulcer occurs in the duodenum more commonly than is generally believed. Obviously this statement cannot be supported by figures because in the great majority of cases medical treatment is indicated, only such cases coming to surgery as present other complications, such as recurrent severe hemorrhage, and those in which medical treatment is unsuccessful. Likewise, we have found that the apex of the duodenal cap is a much more frequent site of ulceration than is commonly thought (Figs. 5 and 6). The detail offered by compression studies is a valuable factor in the early discovery of such lesions, inasmuch as ulcers at this point do not commonly produce recognizable contour deformity in the barium-filled bulb.

The old roentgenologic dictum, "Once an ulcer, always an ulcer," has been thoroughly refuted by repeated observations of cases in which check-up studies after a period of medical treatment show partial or complete disappearance of the niche with cicatricial organization in the form of radiating mucous folds (Figs. 1, 2, 3, and 4). Comparative studies after medical treatment afford graphic evidence of the response of the lesion. On the other hand, if only contour studies of the barium-filled bulb are used, the character of the cap deformity may be exactly duplicated even though the ulcer has healed. Some types of acute ulcer will show no spot of greater density or fleck retention consistent with niche evidence, but will show, according to Shindler[6] and Forssell, an oval or round pseudo-polypoid defect, the diameter of which may be as small as one centimeter or as large as four centimeters. The general contour of the cap is usually abnormal in these acute cases, but is not necessarily of a fixed type. Forssell has explained this appearance as being due to cushions of inflamed mucous membrane around the ulcerating lesion. Niche evidence is difficult to obtain in such cases, but may be shown on repeated studies.

The use of the word "compression," in speaking of this supplementary roentgen procedure, may raise the objection of harmful results because of too great pressure over a diseased structure. The amount of pressure is not great; frequently the mildest degree suffices to distribute the barium solution in the bulb in the manner necessary to obtain mucosal relief patterns. Also the pressure is distributed over a palm-sized area and is not of point type.

GASTROJEJUNAL ULCER

The present-day accuracy of roentgen depiction of gastrojejunal ulcer is still far from satisfactory. The use of the fractional barium meal and multiple film studies, made with various degrees of pressure over the region of anastomosis, still fail to show a sufficiently high percentage of lesions to compare favorably with the accuracy of visualization of similar lesions in the stomach or cap.

While it is desirable to use the full barium meal to estimate emptying time, pyloric function, condition of the duodenal cap, and the presence or absence of retention pouches, most of the examination should be made with just enough opaque medium to coat the walls of the gastric pouch, the stomal orifice, and the jejunal loops in the immediate vicinity of the anastomosis. One swallow of a moderately thick barium and water paste is usually sufficient. Mild degrees of compression are used in obtaining the series of detailed studies. Niche visualization here, as in the stomach and cap, is evidenced by barium deposition in the ulcer

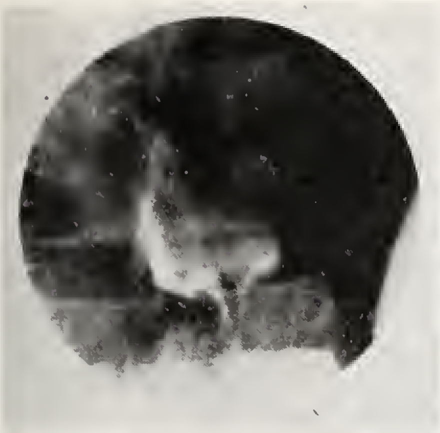


Fig. 4

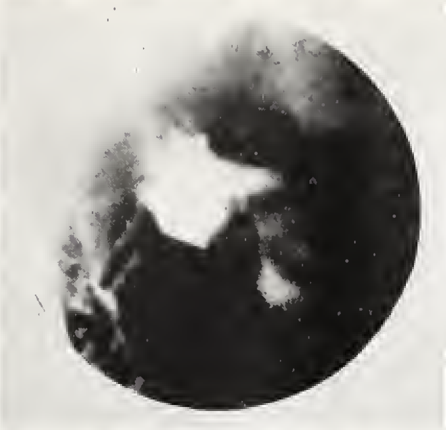


Fig. 5

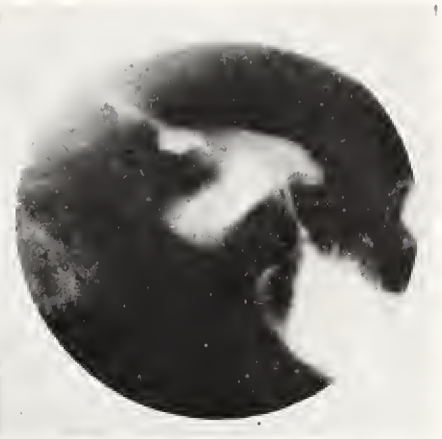


Fig. 6

Fig. 4.—Same case after medical treatment showing disappearance of niche.
Fig. 5.—Barium filled cap showing questionable contour deformity.
Fig. 6.—Same cap under compression showing definite ulcer niche in apex.

crater, which is commonly situated at the stomal border, more frequently on the duodenal aspect, or within two centimeters of the stomal orifice. Occasionally, however, lesions may be shown two to six inches from the stomach. In the absence of demonstrable niche evidence, close correlation of clinical symptoms and findings, and evidence of local tenderness noted on fluoroscopic observation are necessary to make a diagnosis of peptic gastrojejunal ulcer.

SUMMARY

The present-day status of roentgen visualization of peptic ulcer is discussed. Recent technical refinements, with the use of supplementary procedures for obtaining mucosal studies, permit the roentgenologist to attain a high degree of accuracy in the diagnosis of gastro-duodenal ulcer. This is particularly true in cases of duodenal ulcer in which the niche has been visualized through the aid of compression studies. Roentgenographic studies of such cases before and after medical treatment offer definite evidence of healing not obtained by other methods.

1520 Chapala Street.

REFERENCES

1. Reiche, F.: Zur Diagnose des Ulcus Ventriculi im Röntgenbild, Fortschr. a. d. Geb. der Röntgenstrahlen, 14:171-173, 1909.
2. Forssell, G.: Acta Radiol., 3:217, Fasc. 2-3.
3. Akerlund, Ake: Roentgen Diagnosis of Duodenal Ulcer with Consideration of Local "Direct" Roentgen Signs, Fortschr. a. d. Geb. der Röntgenstrahlen, Bd. 30:43-49, 1923.
4. Berg, H. H.: Direct Signs of Duodenal Ulcer, Brit. J. Radiol., 30:372-376 (Oct.), 1925.
5. Chaoul, H.: Ueber ein Verfahren zur Radiologischen Untersuchung des Duodenums, Deutsche Ztschr. f. Chir., 138:161, L. 916-17.
6. Schindler, R.: Quoted by G. Von Bergmann and H. H. Berg, Acta Radiol., 6:179-180, 1926.
7. Geyman, M. J.: Roentgen Examination of the Gastro-Intestinal Tract, Southwestern Med. (Dec.), 1931.
8. Geyman, M. J.: Evaluation of Compression Technique, Am. J. Roentgenol., 28:211-222, No. 2, 1932.

DISCUSSION

Kenneth S. Davis, M. D. (2131 Ocean Avenue, Los Angeles).—Doctor Geyman's demonstration of "compression technique" for the direct visualization of duodenal ulcers is a distinct contribution to the gastro-intestinal examination. In this work he has brought out one point which is of much interest to the radiologist: the possibility of having a penetrating duodenal ulcer without deformity of bulb contour except for the niche or fleck.

I have had several proved cases of duodenal ulcer in which the only roentgenographic finding was that of a niche on the lesser curvature of the cap or a fleck on the posterior wall, the latter only being demonstrable by direct anteroposterior palpation. In these patients the duodenal cap showed no incisura or other spastic deformities. In our routine gastro-intestinal examinations, I have found it of value to have the patient take one or two swallows of the barium mixture, following which I make a careful examination of the rugae on the posterior wall. In this manner I have been able to demonstrate flecks on the posterior wall which would have been overlooked by the use of a full barium meal.

I have also found that a careful study of peristalsis is a great help in localizing lesions in cases with indefinite roentgenographic evidence of ulcer.

In two cases of saddle-type gastric ulcer without niche formation, the only roentgenographic evidence of the lesion was an absence of peristalsis and a loss of the normal flexibility of the stomach wall in the area of involvement.

⁂

R. G. Taylor, M. D. (1212 Shatto Street, Los Angeles).—The authors have given a very good presentation of what is known and practiced in the roentgenray diagnosis of peptic ulcer, and one naturally agrees with most of the statements made. The chief point made in the paper, of course, is the authors' description, experience, and conclusions with regard to the particular compression technique which they use for demonstrating the ulcer niche. We have had some experience with it, and while I think there is no question but what it is possible by its use to demonstrate and visualize an ulcer niche that would not be possible by ordinary methods, I am not at all sure that it raises the actual percentage of correct diagnoses of ulcers very much.

The authors say it is time-consuming and must be done in a painstaking and careful way in order to be at all successful or useful. This is surely true. Our own feeling about the method is that it is not needed in the majority of cases, and adds unnecessary time and expense to the examination.

Of the cases in which the secondary signs of ulcer are relied upon for a diagnosis, there is probably a small percentage in which these are not sufficiently definite to be relied upon. In this small percentage the use of the compression, with its attendant extra time and effort, is undoubtedly justified.

A point not stressed by the authors, but which has been demonstrated by our experience, is that there are sources of error of a very definite character connected with this type of examination. The recognition of a small fleck of barium on the wall of the duodenum or stomach as the actual ulcer niche requires under most careful examination with this method (or any other) repeated observations; also the absence of the niche as the result of an examination of this type cannot be definitely determined without considerable repetition of the procedure. It is perfectly logical to expect that so small an ulcer crater, as is frequently present, cannot be invariably filled with barium. Ulcer craters as large as a centimeter, unless they are deep, often do not fill on the initial examination.

With regard to some of the secondary signs, I am under the impression from reading the paper that the authors feel that incisura and hyperperistalsis are rather usually and commonly found in ulcer. Roentgen-ray literature also gives one this impression. So far as gastric ulcer is concerned, unless it is situated at the pylorus we do not believe that hyperperistalsis is very frequent, and in our own experience incisura is rather uncommon.

With duodenal ulcer we agree with the authors that the apex of the duodenal cap is more frequently the site of the ulcer than is commonly thought from a perusal of the literature.

In the differential diagnosis between active ulcer of the duodenum and old deformity due to superficial scars and contraction, we believe that the elicitation of tenderness by direct palpation with the palpating finger is probably as useful a differential method as any.

We had hoped that this method would be of some help to us in demonstrating gastrojejunal ulcers, but it has been a disappointment. We are still relying on the secondary signs more than on the demonstration of the niche.

Also in high lesions under the costal margin, in obese or heavily muscled and sthenic habitus patients, the compression bag or cylinder is often of little or no help.

When all is said and done we must in the main agree with the authors that the use of the compression method does, without question, result, in a small percentage of cases, in the production of positive visualizable evidence of the actual lesion, and, this being so, roentgenologists should be equipped for and experienced in its use; but we still believe that the careful roentgenologist can find a niche nearly as often as it can be found by any method, during the fluoroscopic examination, by the use of manual compression with the gloved hand. However, if he wishes a permanent film record we commend the compression method described by the authors.

⁂

Howard E. Ruggles, M. D. (384 Post Street, San Francisco).—We have been using compression of the duodenum for about a year, and we find it of value in selected cases. Our feeling is that duodenal ulcer can usually be diagnosed by the older methods of careful fluoroscopy, palpation, and serial films. However, there is undoubtedly a small percentage of cases in which ulcer craters will be missed by following this routine, and it is worth while to at least observe the duodenum under compression whether or not films are made. Doctor Geyman is to be commended for again calling attention to this aid in diagnosis.

⁂

Doctor Geyman, (Closing).—Doctor Davis mentioned niche evidence of duodenal ulcer demonstrable by anteroposterior palpation during fluoroscopic study. This is true of a considerable number of cases, but we feel that film studies made with local compression not only show the niche more accurately delineated but afford a permanent record which is very useful in evaluating the response of a lesion to treatment; as shown by future similar studies.

We have certainly not meant to give the impression that the supplementary use of compression technique in routine gastro-intestinal examinations will greatly increase the percentage of correct diagnoses of duodenal lesions, but there is without question an appreciable number of instances in which a small niche is brought to light which was not in evidence during careful fluoroscopic examination and which caused no contour defect of the barium-filled bulb.

We feel that Doctor Taylor overemphasizes the additional expense involved; and the slight additional time required is justified by the information obtained.

We again wish to emphasize that the effectiveness of the procedure is directly proportional to the experience of the examiner with this method and we do not recommend it for occasional use. We do not agree with Doctor Taylor as regards accuracy of niche visualization by fluoroscopic examination. It is particularly difficult, even for a skilled fluoroscopist, to visualize mucosal detail when any degree of bulbar irritability is present. Film studies of such caps made with local compression and rapid exposure frequently show lesions with great detail. The only recent published figures on niche incidence where compression technique was not used are those of Doctor Kirklin, who found niche evidence in 15.24 per cent of duodenal ulcers seen at the Mayo Clinic in 1930. Our niche evidence is over 50 per cent. The use of compression technique does not replace any of the conventional procedures, but in our three years' experience with its use it has proved a valuable adjunct to the established methods.

THE MORPHOLOGY OF THE ERYTHROCYTES IN CIRRHOSIS AND OTHER DISORDERS OF THE LIVER*

By Garnett Cheney, M. D.

San Francisco

Very little attention has been paid to the morphology of the red blood cells in cirrhosis and other disorders of the liver in which anemia is often a feature. Nothing unusual has been noted except in a few isolated instances, and it has been assumed that the erythrocytes have the same general characteristics as those ascribed to the other anemias occurring secondarily to organic disease. The anemia of cirrhosis has been classified with these as normocytic or microcytic and hypochromic, and it has not been emphasized that there are any distinguishing features.

Coincident with the present great interest in the treatment of anemias the importance of the size and shape of the red cells has become manifest. It is well recognized that in what has long been termed primary anemias the red corpuscles are characteristically very large and often oval, and that in certain types of so-called secondary anemias they appear to be very small and thick. While measuring the diameters of the erythrocytes in a large number of cases in the last three years, it has grown evident that the morphology of these cells in disorders of the liver is similar to that of primary anemia rather than secondary anemia, and that similar changes in number and size occur during appropriate liver therapy.

PREVIOUS INVESTIGATIONS

Although most investigations up to the present time have failed to separate in any way the anemia of hepatic disorders from the general picture of secondary anemias, there have been a few ob-

---

* This paper was submitted with the nom de plume "Arnold," and was awarded the California Medical Association Clinical Prize of $150 at the sixty-second annual session of the California Medical Association, Del Monte, April 24-27, 1933.

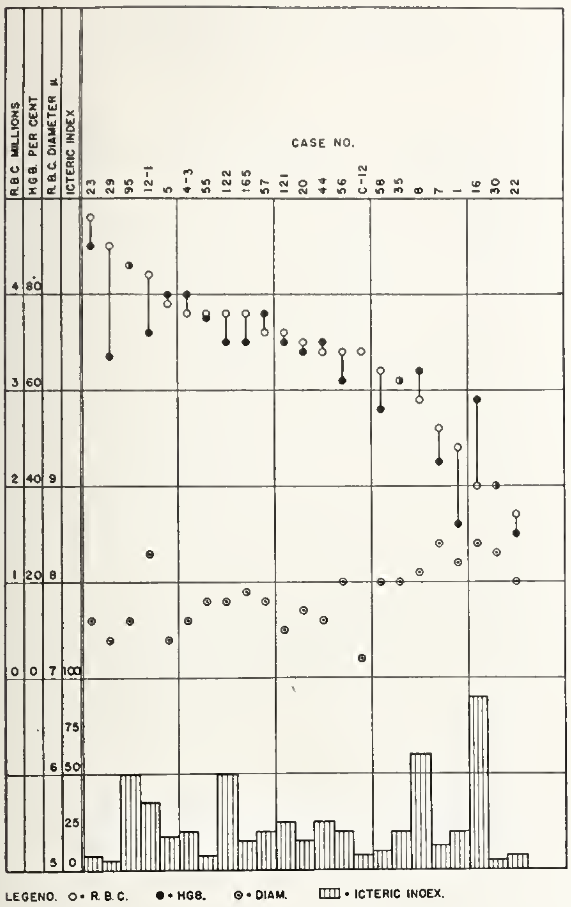


Fig. 1.—The relationship of the red cell count, the hemoglobin per cent, the average diameter of the erythrocytes, and the icteric index in twenty-three cases of cirrhosis of the liver.

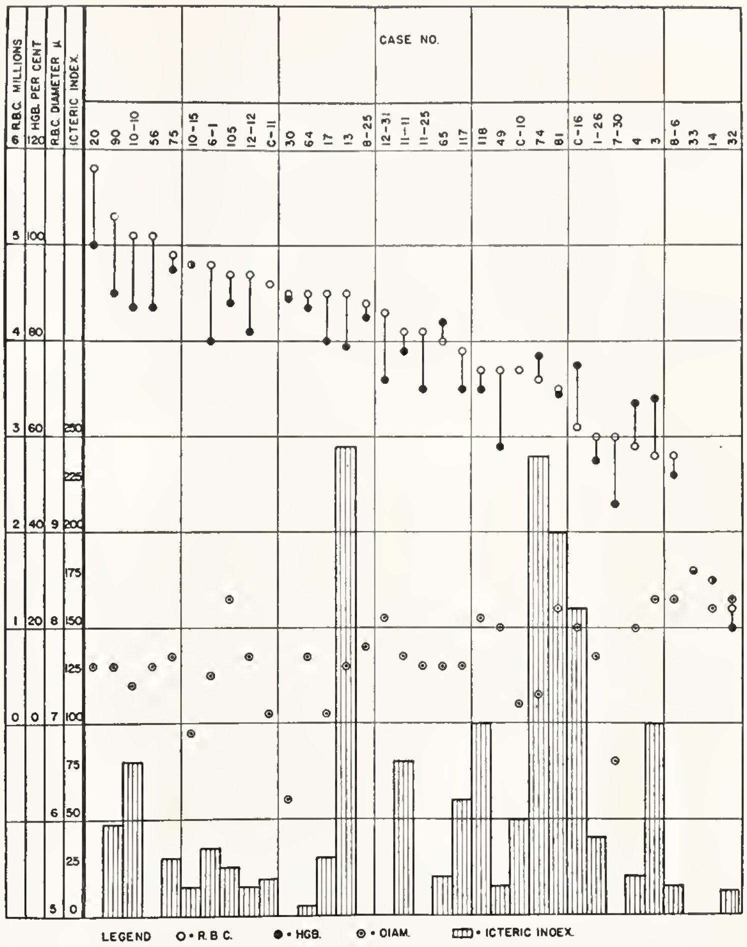


Fig. 2.—The relationship of the red cell count, the hemoglobin per cent, the average diameter of the erythrocytes, and the icteric index in thirty-four cases of disorders of the liver other than cirrhosis.

servations recorded suggesting that, in certain instances at least, the red cell morphology resembled that of pernicious anemia. Osler[1] stated in 1908 that "the blood findings rarely may simulate those of pernicious anemia." In 1920 Minot,[2] writing in *Oxford Medicine* on *Diseases of the Blood*, states: "In fact, there are certain ill-defined cases of anemia where the color index is about one, and in which some macrocytes occur, that may be readily mistaken for pernicious anemia, and are perhaps impossible to distinguish from it. Such cases in some instances seem to be dependent upon liver disease." On the other hand, Naegeli[3] does not feel that there should ever be any confusion. He says: "Vorläufig kann ich der Auffassung nicht beitreten, dass Cirrhose perniziös-anämisches Blutbild mache, obwohl leichte Erhöhung des F. I. vorkommt."

It has long been noted that macrocytosis may occur associated with jaundice. In 1927 Jorgensen and Warburg[4] collected the cases reported up to that time and added eleven cases of their own. Many of these showed average diameters well above the normal in such disorders as cirrhosis, catarrhal jaundice, and toxic jaundice. It had been thought that the increase in the cell diameters was proportionate to the degree of jaundice, but these authors showed that this was not always so. They also felt that the macrocytes were relatively flat, as the few volume determinations which had been carried out were normal except in one or two instances; although they pointed out that further investigations were necessary to settle this point. Other authors abroad have confirmed these observations,[5, 6] but have not added to our knowledge of the relationship between macrocytosis and jaundice. It is generally recognized that chronic hereditary hemolytic jaundice is associated with microcytosis.

Haden[7] has recently published the results of his measurements of red cells in 311 cases of all types of anemia, and found the size was not increased except in pernicious anemia. There were only nine exceptions. In these the volume index was greater than one. He does not comment on the cause of the anemia in them. In discussing the causes of macrocytosis he does not mention jaundice or liver disease. Osgood and Haskins[8] have recently attempted to differentiate anemias on a basis of color, volume and saturation indices, and have placed the anemia of cirrhosis in the group which often has normal indices, but may show low color and volume indices. No case studies are presented to justify such a classification.

In a very recent article Schulten and Malamos,[9] in Hamburg, have discussed changes in the red cells in liver disease. They commence by saying, "Ueber die Grössenveränderungen der roten Blutkörperchen bei Leberkrankungen findet man in dem einschlägigen Lehr- und Handbüchern so gut wie nichts." They present measurements in only one case, but state that there is an almost constant increase in the average red cell diameter with a shift of the Price-Jones curve to the right, and often an increase in the volume index and in the

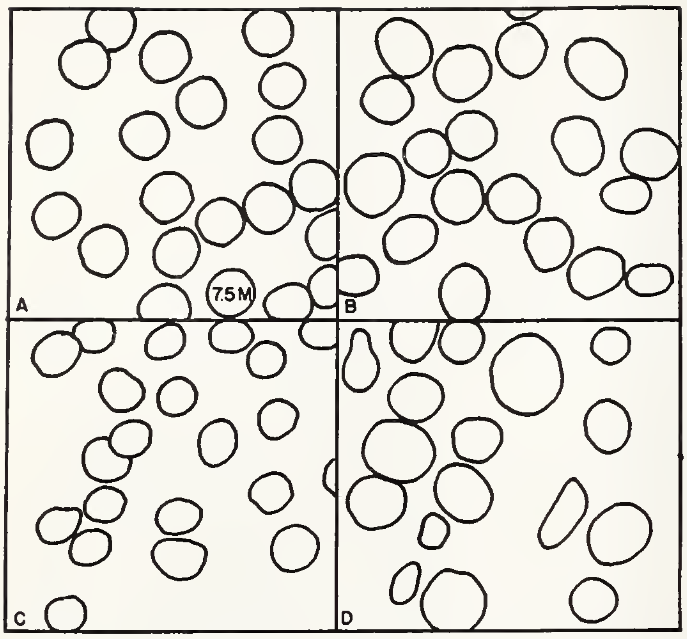


Fig. 3.—Morphology of erythrocytes. Tracings of the projected images which are magnified one thousand times: (a) Normal blood. Average diameter, 7.5 u. (b) Anemia of cirrhosis. Average diameter, 8.3 u. Oval macrocytes, no megalocytes, no microcytes. (c) Secondary anemia of nephritis. Average diameter, 6.8 u. Pronounced microsytosis. (d) Pernicious anemia. Average diameter, 8.5 u. Oval macrocytes, megalocytes, microcytes, and poikilocytes.

color index. They felt that the blood picture was very similar to that in pernicious anemia, and that the macrocytosis was not directly related to the degree of jaundice.

PRESENT STUDY

The present study of red cell morphology is based on the examination of the blood in fifty-seven cases of disorders of the liver. These have been divided into two groups. The first contains twenty-three cases of definite Laennec cirrhosis and is considered separately because anemia is so often an accompanying finding.[10] The second includes all other cases, and is mostly made up of obstructive jaundice, hepatitis, catarrhal jaundice, a few cases of chronic passive congestion of the liver, and a few other cases in which there seemed to be some definite disturbance in liver function. Anemia is not so common in this group. Its incidence has recently been discussed by Jordan and McVicar.[11]

These two groups are presented in Tables 1 and 2, respectively. Each case was carefully studied clinically in order to arrive at an accurate diagnosis. Red cell counts and hemoglobin determinations (Sahli) were nearly all performed by trained laboratory technicians, usually on venous blood. The color index was computed by Warburg's hematological nomogram.[12] The average diameter of the erythrocytes was obtained by the diffraction method, which has proved satisfactory for general clinical use.[13, 14] All observations were made by the author. The icteric index is recorded in all but nine cases. Complicating incidents and the course of the condition, when important, are noted under "remarks."

The cases are arranged according to the red cell counts, the highest count being listed first and the lowest count last. It is readily noted that anemia (erythrocyte count less than 4,000,000 or hemoglobin less than 70 per cent [11]) is much more frequent in the cirrhosis group, where it occurs in all but four instances, or in 82.6 per cent. However, it occurs in only fifteen of the noncirrhosis group, or 44 per cent. A color index of one or greater is present in nine cases in Table 1 and in seven cases of Table 2, or in 28 per cent of the whole series. The frequency of a high color index is well illustrated by Fig. 1 and Fig. 2, and does not appear to be definitely proportional to the degree of the anemia, although it is high in five of seven instances in the noncirrhosis group, which are anemic.

The average diameter of the red cells is of great interest. The normal average is usually taken to be about 7.5 microns,[15] but may vary between 6.9 microns and 7.9 microns. Eight microns, or above, may be considered abnormally large; that is, a

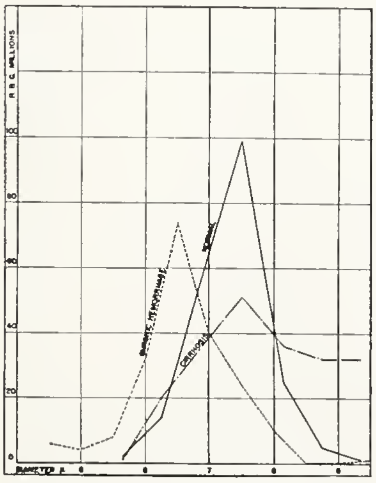


Fig. 4

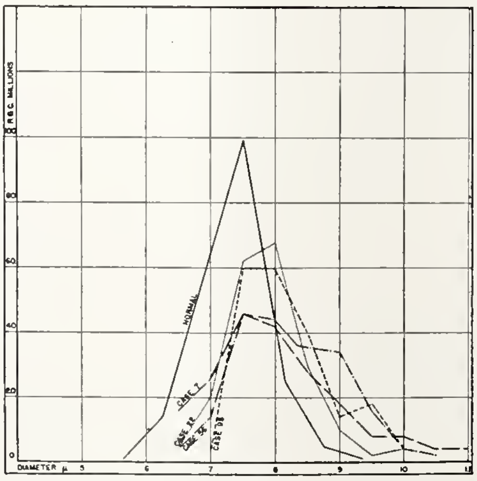


Fig. 5

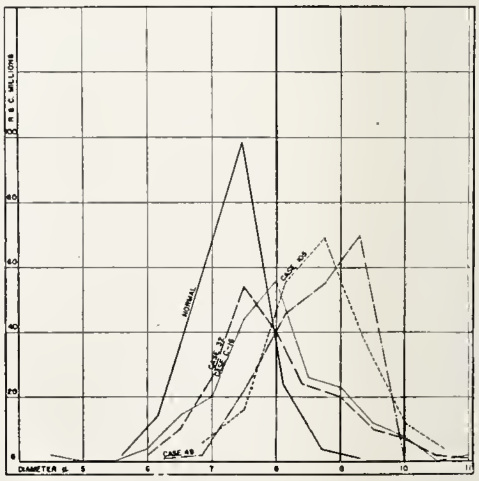


Fig. 6

Fig. 4.—Comparison of a normal Price-Jones curve with an average erythrocyte diameter of 7.5 u to the microcytosis of chronic hemorrhage with an average diameter of 6.25 u, and to the macrocytosis of cirrhosis with an average diameter of 8.0 u.

Fig. 5.—Price-Jones curves in four cases of cirrhosis at different blood levels compared with the normal. Case 95 = 4.3 mil. R. B. C.; average diameter = 8.18 u. Case 56 = 3.4 mil. R. B. C.; average diameter = 8.23 u. Case 7 = 2.6 mil. R. B. C.; average diameter = 8.15 u. Case 22 = 1.7 mil. R. B. C.; average diameter = 7.90 u.

Fig. 6.—Price-Jones curves in four cases of liver disease other than cirrhosis at different blood levels compared with the normal. Case 105 = 4.7 mil. R. B. C.; average diameter = 8.65 u. Case 49 = 3.7 mil. R. B. C.; average diameter = 8.60 u. Case C = 16 = 3.1 mil. R. B.; average diameter = 8.06. Case 32 = 1.2 mil. R. B. C.; average diameter = 8.17 u.

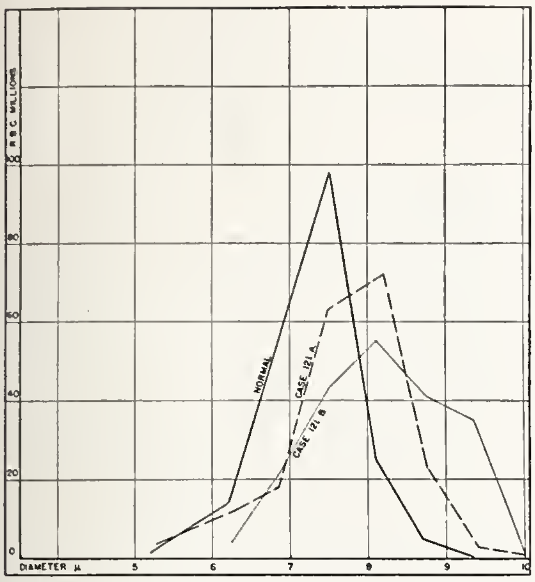


Fig. 7

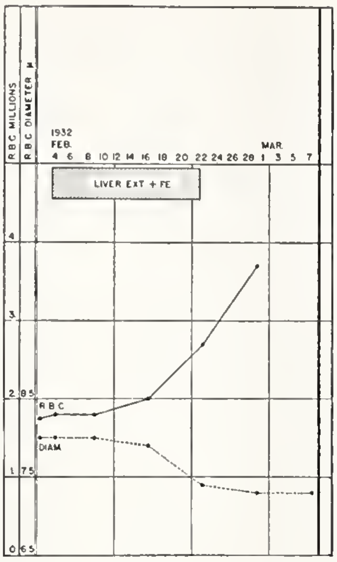


Fig. 8

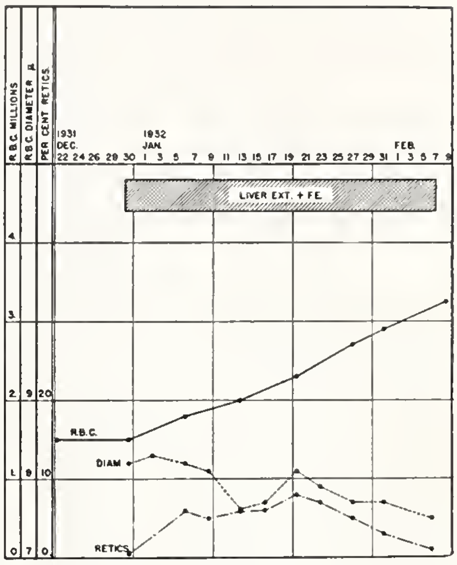


Fig. 9

Fig. 7.—Price-Jones curves in cirrhosis (Case 121) eight months before clinical symptoms, and after the development of ascites and anemia. A. = April 21, 1932. R. B. C. = 4.2 mil.; average diameter = 7.75 u. B = January 13, 1933. R. B. C. = 3.6 mil.; average diameter = 8.17 u.

Fig. 8 (Case 22). Cirrhosis treated, showing decrease in average red cell diameter coincident with increase in number of erythrocytes.

Fig. 9 (Case 14).—Toxic hepatitis treated, showing relationship of change in average red cell diameter to reticulocyte response.

definite macrocytosis. Tables 1 and 2 show that macrocytosis is very common in disorders of the liver. It is present in ten cases, or 43.5 per cent, of the cirrhosis group and in eleven cases, or 32.4 per cent, of the miscellaneous group. It occurs in 36.8 per cent of all cases. However, even more striking than the frequency of macrocytosis is its correlation with the degree of anemia. The more pronounced the anemia, the greater is the tendency to large red cells. This is graphically shown in Figs 1 and 2. As the blood count drops, the erythrocyte diameters become larger and larger. This is almost constant for the cases of cirrhosis with anemia, but there are five cases in the miscellaneous group with anemia in which macrocytosis does not occur. This can be adequately explained in most instances. Case C-10 was one of probable "catarrhal jaundice" in a woman sixty-eight years old, who might have had malignant disease, as her course subsequent to hospital discharge is unknown. Case 74 was complicated by suppuration of the bile passages and septicemia, and severe infections often tend to produce microcytosis. Case 1-26 was also complicated by infection, a hepatic abscess. Case 7-20 had a palpable liver, but proved to have chronic hemolytic jaundice in which small red cells are the usual finding. Case 33 had repeated large hemorrhages, and chronic blood loss tends to reduce the size of the erythrocytes to below the normal average.

The size of the red cells shows no definite relationship with the etiology of the liver disease nor with the concentration of the serum bilirubin. It seems to parallel the extent of damage to the parenchyma cells of the liver, but this cannot be positively stated until a careful correlation is made with the microscopic pathology of this organ. While the icteric index was increased in the majority of cases, Figs. 1 and 2 illustrate that macrocytosis occurs when the serum bilirubin is normal or when the jaundice is intense, and that normal erythrocyte averages occur under the same conditions.

An examination of a blood film in the anemia of liver disease reveals a number of macrocytes, and a considerable degree of variation in the size of the red cells. However, as very large cells are usually uncommon, and as the anisocytosis does not as a rule include very small cells, the fact that the average diameter of the erythrocytes is greater than normally encountered may readily escape casual observation. Poikilocytes are rare except in the form of slightly oval macrocytes. This characteristic morphology of the red cells is illustrated in Fig. 3 (b) and is compared to a normal blood (a), the blood of a secondary anemia due to nephritis (c), and the blood of pernicious anemia (d). The figure is a projection tracing with an original magnification of 2000 (reduced to 1000 for reproduction), which makes the differences in cell size and shape readily apparent.

The variations in red cell size may be most accurately depicted by measuring the diameters of a large number of cells, and recording these measurements in the form of a curve, as described by Price-Jones.[16] Not only is the average diameter obtained by these measurements, but the entire distribution of the group of cells studied, usually two hundred. He has worked out a normal curve and shown that in macrocytosis the peak is to the right of the normal and the curve is usually flatter, while in microcytosis the peak is to the left. Such curves are shown in Fig. 4. The normal curve in this and other figures is taken from Wyckoff's average measurements in one hundred normal individuals.[17]

Ten cases from the whole series have been selected for measurements, and Price-Jones curves have been plotted. Both the micrometric method [13] and the projection method [18] have been employed. A curve typical of liver disease is shown in Fig. 4.

TABLE 1.—*Studies of the Blood in Twenty-Three Cases of Cirrhosis of the Liver*

Case No.	Red Blood Corpuscles	Hemo-globin	Color Index	Average Diameter	Icteric Index	Remarks
23	4.8	90	0.93	7.6	8	Recurrent ascites.
29	4.5	67	0.75	7.4	6	Also diabetes.
95	4.3	86	1.0	7.6	50	Rapid course. Died.
12-1	4.2	72	0.86	8.3	36	Untraced.
5	3.9	80	1.0	7.4	18	Chronic recurrent ascites.
4-3	3.8	80	1.0	7.6	19	Splenectomy for Banti's Syndrome. Autopsy.
55	3.8	75	0.99	7.8	8	Autopsy.
122	3.8	70	0.92	7.8	50	Fever. Very toxic.
165	3.8	70	0.92	7.9	14	Hematemesis. Autopsy.
57	3.6	76	1.0	7.8	20	No ascites. Improved.
121	3.6	70	0.97	7.5	25	No ascites. ?
20	3.5	68	0.97	7.7	15	Clinical pernicious anemia. Terminal cirrhosis. Autopsy.
44	3.4	70	1.0	7.6	25	Clinically improved.
56	3.4	62	0.91	8.0	20	Died.
C-12	3.4	....	......	7.2	7	Improved.
58	3.2	56	0.88	8.0	8	Rapid course. Autopsy.
35	3.1	62	1.0	8.0	20	Also small hepatic calcium at autopsy.
8	2.9	64	1.10	8.1	60	Rapid course. Died.
7	2.6	45	0.87	8.4	13	Died.
1	2.4	32	0.62	8.2	19	Originally diagnosed pernicious amenia. Autopsy.
16	2.0	58	1.45	8.4	90	Died.
30	2.0	40	1.0	8.3	6	Moderate hematemesis.
22	1.7	30	0.89	8.0	8	Banti's Syndrome. Autopsy.

There is a shift to the right and it is much flatter than a normal one. However, despite the predominance of macrocytes there are no cells larger than those occasionally encountered in a normal blood. This is compared to a normal curve, and to a case of anemia secondary to chronic hemorrhage in which microcytosis really occurs. Curves from four cases of cirrhosis, numbers 95, 56, 7, and 22, are shown in Fig. 5, each at a different blood level. In each instance there is a shift of the curve to the right, even when the blood count is normal. Curves have also been plotted from four cases in Table 2, numbers 105, 49, C-16, and 32, and Fig. 6 shows that the shift to the right may occur in all types of liver disease. Fig. 7 shows a Price-Jones curve in a case of cirrhosis eight months before the onset of symptoms, and after the development of ascites and anemia. The definite tendency to macrocytosis has become much more pronounced.

It has been shown that during successful liver therapy in pernicious anemia [6] and in certain secondary anemias in which macrocytosis occurs,[19] the size of the red cells returns to normal. This occurs even though the initial macrocytosis may have been marked. It also takes place when treating the anemia associated with hepatic disease with a secondary anemia liver extract and iron.* Although the details of this response have been made the basis of a separate report,[20] it is pertinent to a discussion of erythrocyte morphology to note that such a change in cell size occurs, and that it is similar to that which has been extensively studied in pernicious anemia.

Two cases, 22 and 14, have been selected in order to demonstrate this point. Fig. 8 shows the increase in number of red cells coincident with liver extract and iron therapy in a case of cirrhosis with marked anemia. Clinically, this patient presented Banti's syndrome, and at autopsy (by Doctor Ophüls) the liver showed the pathologic findings typical of atrophic portal cirrhosis. In addition to the marked response of the erythrocytes in number, the progressive diminution in their average diameters is also charted. There is an initial macrocytosis of 8 microns, which begins to diminish after the first week of treatment and comes down to 7.3 microns after the termination of therapy.

Similar findings are shown in Fig. 9. This patient had syphilis, and developed jaundice and anemia following arsenic therapy. The figure shows two characteristics in addition to the previous one. The reticulocyte response is also charted, and the rise parallels the time of the reduction in average cell diameters. Also, after the initial reduction in macrocytosis there is again a temporary increase in cell diameters corresponding to the height of the reticulocyte increase, and then a gradual diminution to normal. This reciprocal relationship between reticulocytes and red cell size is typical of the response of pernicious anemia to liver therapy.[21]

Studies of erythrocyte volume have been made in only twelve cases, consequently the findings are not presented with the other data in Tables 1 and 2, but are presented separately in Table 3. The hematocrit observations necessary for the calculation of the volume have been made by the van Allen pipettes.[22] The normal average red cell volume lies between 75 and 95 cubic microns.[15] Table 3 shows the case numbers which correspond with the previous tables, except Case C-11, which had slight jaundice probably due to a common-duct stone. The cases are similarly arranged in order of the number of red corpuscles, and the average erythrocyte volume is recorded in each instance.

It is a significant finding that eleven of the twelve cases have average volumes above normal,

---

* Secondary Anemia Liver Extract No. 55, with iron Supplied by Eli Lilly Company.

TABLE 2.—*Studies of the Blood in Thirty-Four Miscellaneous Cases of Disorders of the Liver Other Than Cirrhosis*

Case No.	Diagnosis	Red Blood Corpuscles	Hemoglobin	Color Index	Average Diameter	Icteric Index	Remarks
20	Chronic cardiac decompensation	6.4	100	0.78	7.6	Not Icteric	Large congested liver. Autopsy.
90	Common duct stone	5.3	90	0.84	7.6	48	Operation.
10-10	Common duct stone	5.1	87	0.75	7.4	80	Operation. Autopsy.
50	Common duct stone	5.1	87	0.75	7.6	Intense icterus	Operation.
75	Obstructive jaundice due to calcium of pancreas	4.9	95	0.90	7.7	30	Operation.
10-15	?Common duct stone	4.8	96	1.0	6.9	16	Recovered. Untraced.
61	Tricuspid insufficiency	4.8	80	0.83	7.5	34	Huge liver. No ascites
105	"Catarrhal jaundice"	4.7	88	0.94	7.7	25	Good recovery.
12-12	?Common duct stone	4.7	82	0.87	7.7	16	Recovered. Untraced.
C-11	?Common duct stone	4.6	....	......	7.1	18	Recovered. Untraced.
30	Wilson's disease	4.5	88	0.98	6.2	No icterus	Liver dullness diminished.
64	Diabetes Hepatomegaly	4.5	87	0.97	7.7	6	No evidence of cirrhosis.
17	Hepatitis	4.5	80	0.89	7.6	244	Good recovery.
13	Jaundice Pneumonia	4.5	79	0.88	7.1	30	Good recovery.
8-25	Common duct stone	4.4	85	0.98	7.8	Icteric	Operation.
12-31	Generalized tuberculosis, including liver	4.3	72	0.84	8.1	Not icteric	Huge liver, ascites. Autopsy.
11-11	Common duct stone	4.1	78	0.95	7.7	80	Operation.
11-25	Common duct stone	4.1	70	0.85	7.6	Icteric	Operation.
65	"Cirrhosis cardiac"	4.0	84	1.0	7.6	20	Large congested liver. Autopsy.
117	Obstructive jaundice due to cancer	3.9	70	0.90	7.6	60	Multiple abdominal masses.
118	Common duct stone	3.7	70	0.95	8.1	100	Jaundice cleared up.
49	Hepatitis, Thyrotoxicois	3.7	58	0.79	8.0	16	Good recovery.
C-10	?"Catarrhal jaundice"	3.7	....	......	7.2	50	Good recovery. Untraced.
74	Common duct stone Suppurative cholangitis	3.6	77	1.1	7.3	200	Septicemia. Autopsy.
81	Cancer ampulla	3.5	68	0.90	8.2	240	Autopsy.
C-16	Obstructive jaundice ?Cancer	3.1	75	1.2	8.0	160	Untraced.
1-26	Obstructive jaundice due hepatic abscess	3.0	55	0.92	7.7	40	Postoperative abscess. Autopsy.
7-20	Chronic hemolytic jaundice	3.0	46	0.76	6.6	Icteric	Untraced.
4	Common duct stone	2.9	67	1.2	8.0	20	Recovered without operation.
3	Cancer of bile ducts	2.8	68	1.2	8.3	100	Had intravenous Fe. Autopsy.
8-6	Myelogenous Leukemia Hemolytic jaundice	2.8	52	0.92	8.3	16	Marked hepatic involvement. Autopsy.
33	Obstructive jaundice ?Cancer	1.6	31	0.97	7.0	Intense icterus	Died later at home. Persistent G. I. hemorrhages.
14	As. hepatitis	1.5	30	1.0	8.2	Icteric	Good recovery.
32	Old pulmonary tuberculosis Fatty liver	1.2	20	0.83	8.3	12	No evidence of hemorrhage. Autopsy.

Table 3.—*The Volume of the Red Cells in Twelve Cases of Liver Disease. Comparison with the Degree of the Anemia.*

Case No.	No. of Red Blood Corpuscles in Millimeter	Volume of Red Blood Corpuscles in Cubic Millimeter
C-11	4.6	108
13	4.5	113
117	3.9	101
122	3.8	106
118	3.7	95
C-10	3.7	101
121	3.6	113
44	3.4	118
C-12	3.4	118
C-16	3.1	122
8	2.9	160
16	2.0	140

including two with normal red cell counts. In the single exception the figure is at the upper limits of normal. It is also noteworthy that those patients showing the most pronounced anemia have the largest cells, evidencing a fair parallelism with the degree of the anemia. This proof of macrocytosis in this small series of twelve cases is even more striking than that of the average diameter readings in the large series of fifty-seven cases.

COMMENT

The study of the morphology of the erythrocytes in these fifty-seven cases seems to clearly separate the anemia of hepatic disease from most other secondary anemias. The red cells tend to be larger than normal and frequently contain sufficient hemoglobin to give a color index of one or greater. The macrocytosis cannot only be recognized in an ordinary blood film, but is well shown by diameter and volume determinations. In measuring the diameter of two hundred cells, it is characteristic that there are, as a rule, no pronounced microcytes and very few very large cells; but the general average is well above the normal figure of 7.5 microns, and usually around 8 microns or even greater, giving a shift to the right in the Price-Jones curve. These characteristics are also evident before the onset of anemia, and parallel in a general way the degree of the anemia, tending to disappear with its improvement. The macrocytes are often oval, but other forms of poikilocytosis are usually lacking.

Most secondary anemias tend to have normal-sized cells or a preponderance of microcytes, often with a low color index. A study of the diameters often shows many below the average normal, and few or no macrocytes, usually with a slight shift to the left of the Price-Jones curve. Sometimes this shift is very marked. The average volume of the red cell is normal or small, practically never increased.[8]

There is no direct confirmation of these findings in the literature on studies of the blood in diseases of the liver except in the recent brief preliminary report of Schulten and Malamos. However, Holler and Kudelka,[5] in their extensive studies of red cell size, report measurements of erythrocyte diameters in twelve cases of liver disease. They found a definite macrocytosis in practically all of these cases. Gunther [6] reported measurements in seven cases of hepatic disorders with jaundice, but found the cell size normal in five and perhaps slightly increased in two. However, none of his cases were anemic. He mentions one other case with cancer of the common bile-duct which was anemic and showed considerable macrocytosis. Dondi,[23] studying the blood in a large series, mentions a patient with cirrhosis of the liver and anemia in whom the color index was high and the volume index was 1.19. The average diameter was also greater than normal. Doubtless other isolated case studies exist, but are not indexed under titles directly related to the present problem, and consequently have been overlooked.

The morphologic characteristics of the erythrocytes in hepatic disorders are strikingly like those of patients with primary anemia, although less marked. They might approach the same degree if the anemia were more severe, as a red cell count below two million is rare, while the blood picture usually described for primary anemia is based on the findings in cases with very low counts, even as low as under one million. Although the macrocytosis and the hyperchromia are common to both, certain differences can be recognized in a blood film. There are no very small cells, and even fewer microcytes than are normally found, while in primary anemia there are often large numbers of very small cells. Most of the larger cells are more nearly the same size than in primary anemia, and very large cells, the so-called megalocytes, are rarely found. Nucleated red cells are very uncommon, and irregularly formed poikilocytes were not noticeable in the series of cases studied. Also the changes in red cell number and size occurring under treatment do not occur if the primary anemia liver extract is used in the usual dosage, while secondary anemia liver extract with iron has no effect in pernicious anemia.

Although the blood picture in these two groups of anemia is similar in many respects, and at times even identical, there are many differences which may be sufficiently pronounced to be of value in differential diagnosis. General recognition of the similarities will lead to further comparative studies and possibly to more accurate differentiation.

It must be remembered that the characteristic blood picture occurring in disorders of the liver is not in any way pathognomonic of liver disease, but may be encountered in other conditions commonly classified as secondary anemias. This does not often occur, but is sufficiently frequent to cause confusion. It is met with in a few cases of posthemorrhagic anemia, in nutritional anemia, in chronic diarrhea with anemia, and in a few cases of anemia of unknown etiology.

Although a discussion of the pathogenesis of this blood picture is beyond the scope of this report, it is important to note that the morphologic characteristics are probably due to a deficiency of some element necessary to normal erythrocyte maturation. This may be due to an inability of a damaged liver to store the necessary substance, or an inability to metabolize it. Consequently an inadequate diet, or an excessively rapid elimination of foods containing this substance, or the elements from which it is derived, may lead to a similar effect on hematopoesis. The body might also be deprived of this substance through repeated blood loss. These problems can only be solved by further investigations.

CONCLUSIONS

1. The morphology of the erythrocytes in disorders of the liver has not been sufficiently studied, and has been considered the same as in the general group of secondary anemias.

2. A study of the blood in fifty-seven cases of liver disease shows that the red cells are more like those of primary anemia than of secondary anemia, although certain differences usually occur.

3. The characteristic blood picture shows macrocytosis of the erythrocytes, both by measurements of the diameter and by cell-volume determinations, and the color index is often one or greater.

4. The tendency to macrocytosis appears to be proportional to the degree of the anemia, and not related to the degree of jaundice present.

5. The macrocytosis is manifest before the onset of the anemia and tends to disappear as the anemia clears up, just as in primary anemia, although not on the same type of therapy.

6. The characteristic red cell morphology of liver disease may occur in other so-called secondary anemias, probably because it is dependent on a deficiency of some substance necessary to the normal maturation of the erythrocytes. This deficiency may occur not only due to damaged liver function, but also from other causes.

210 Post Street.

REFERENCES

1. Osler's Modern Medicine, 5:779, 1908.
2. Oxford Medicine, 2:599, 1920.
3. Naegeli, O.: Blutkrankheiten und Blutdiagnostik, 5:358, 1921.
4. Jorgensen, S., and Warburg, E. J.: The Indices and Diameters of the Erythrocytes, and the Best Hematological Criterion of Pernicious Anemia, Acta med. Scandinav., 66:109, 1927.
5. Holler, G., and Kudelka, O.: Resultate von Bestimmungen des Erythrozytendurchmessers beim Menschen unter physiologischen und pathologischen Verhältnissen, Folia-haemat., 97:35-36, 1927-1928.
6. Gunther, H.: Die klinische Bedeutung der Grössenbestimmung der Erythrozytendurchmesser., Deutsches Arch. f. klin. Med., 18:161-162, 1928.
7. Haden, R. L.: Macrocytosis of the Erythrocytes and Achlorhydria in Pernicious Anemia, J. A. M. A., 98:202, 1932.
8. Osgood, E. E., and Haskins, H. D.: Causes, Classification, and Differential Diagnosis of Anemias. Based on the Detailed Examination of over Two Hundred Patients and a Study of the Literature, Ann. Int. Med., 5:1367, 1932.
9. Schulten, H., and Malamos, B.: Changes in Form and Size in Hepatic Diseases, Klin. Wchnschr., 11:1338, 1932.
10. King, R. B.: The Blood Picture in Portal Cirrhosis of the Liver, New England J. Med., 200:482, 1929.
11. Jordan, F. M., and McVicar, C. R.: Anemia in Jaundice: I. A Clinical Study of Cases in which Jaundice was Obstructive or Intrahepatic Types, Am. J. M. Sc., 179:654, 1930.
12. Warburg, E. J.: Et Nomogram Til haematologisk Brug, Hospitalstid., 1926.
13. Haden, R. L.: A Comparison of Methods for Determining the Size of the Erythrocyte, J. Lab. and Clin. Med., 16:976, 1931.
14. Pijper, A.: Red Cell Measurements—A Comparison of the Diffraction Method and the Microscopic Method, J. Path. and Bact., 34:771, 1931.
15. Von Boros, J.: Ueber Grösse, Volumen und Form der menschlichen Erythrozyten und deren Zusammenhang," Wien. Arch. f. inn. Med., 12:243, 1926.
16. Price-Jones, C.: The Variation in the Sizes of Red Blood Cells, Brit. M. J., 2:1418, 1910.
17. Wyckoff, H. A.: Unpublished Work, Stanford Clinical Laboratory.
18. Parker, F. P., Lewis, G. T., and McGhee, J. L.: Microscopic Projections in the Measurement of Erythrocytes, J. Lab. and Clin. Med., 14:663, 1929.
19. Cheney, G., and Niemand, F.: The Treatment of Secondary Anemia with "Secondary Anemia Liver Extract" and Iron, Am. J. M. Sc., 184:314, 1932.
20. To be published.
21. Fitzhugh, G., and Persons, E. L.: Studies on Red Blood Cell Diameter, J. Clin. Investigation, 7:631, 1929.
22. Stitt, E. R.: Practical Bacteriology, Blood Work and Animal Parasitology, eighth edition, 323.
23. Dondi, G.: Diameter, Volume, Hemoglobin, Capacity and Importance of Microcytosis in Human Pathology, Arch. d. pat. e. clin. med., 11:231, 1931.

FUNCTIONAL DISORDERS OF THE COLON [*]

THE SPASTIC COLON, THE IRRITABLE COLON, AND MUCOUS COLITIS

By Fred H. Kruse, M. D.
San Francisco

Discussion *by Franklin R. Nuzum, M. D., Santa Barbara; R. Manning Clarke, M. D., Los Angeles; Herold P. Hare, M. D., Los Angeles.*

WE are still searching for a good name which may adequately inform the layman as to our conception of his troubles when suffering from the symptoms and manifestations of that intestinal syndrome variously entitled by the medical profession, spastic colon, irritable colon, or mucous colitis. Naturally, such a statement implies that these disorders are identical, and of that I am firmly convinced; they represent simply different states of pathologic function or disturbances in normal physiologic activities.

"COLITIS" AND FUNCTIONAL COLOPATHY

Although we have been warned never to use the word "colitis" in relation to that abdominal disturbance associated with mucus in the stools and with irritable colon, we cannot seem to help it; it seems to the patient so satisfying and comprehensive, and saves us so much breath and prolonged discussion. Where the conception has been acquired, I do not know, but the physician has only to utter the word "colitis" to his patient and all argument ceases. Thereafter, every bizarre and puzzling pain and distress has an explanation. It is like saying, "Oh, that is just gas," or "It is your nerves." I have tried the words "spastic colon" and "irritable colon" on many of my patients and have spent the next hour or two defending myself with explanations. And I must admit that when in a hurry I have been guilty of saying "colitis."

---

[*] From the department of medicine, University of California Medical School.

[*] Read before the joint meeting of Radiology and General Medicine sections of the California Medical Association at the sixty-first annual session, Pasadena, May 2–5, 1932.

If that were all, we might better let the discussion rest. But unfortunately it is only the beginning. There are too many scarred abdomens with persistence of symptoms; too many reoperations and operations undertaken for pain; too many unrewarded appendectomies for "chronic appendicitis." From the standpoint of our responsibility to the individual sufferer, it is apparent that the protean manifestations of some functional abdominal disorders have not been well understood by many physicians, and the study of the symptoms has been neglected.

Symptoms, as John Ryle says, express a disturbance of function. The harmonious activity of the organ or system has been upset. Organic disease may lurk in the background, but it must be proved. There is no symptom or symptom complex so necessary of analysis as colonic pain, and no organ in the body that can present a more bizarre or puzzling array of symptoms than a functionally deranged colon.

From the standpoint of the public and the individual, we should be guarded in our use of the word "colitis." It has been widely used and often inadvisedly. Popular articles on health, irregular practitioners, and cultists with their "cures" have often served to give the term a terrifying significance and to stamp the disease as incurable; and, of course, where the functionally deranged colon is concerned they totally misdirect the sufferer to treatment with various laxatives, "nature's herbs," coarse foods, and colon irrigations. It is difficult for the functionally deranged patient to disassociate his case of "colitis" from that of a friend or neighbor with ulcerative colitis, whom he knows to be permanently crippled.

Colitis refers to an organic disease characterized by inflammation of the colon, not to a dysfunction. It is true that in some cases of functional disturbance, uncontrolled and not properly treated, degrees of inflammation may supervene, and a real colitis develop. Colitis, in its proper sense, means a diseased and inflamed colon, and is commonly associated with such pathologic conditions as chronic ulcerative colitis; tuberculous ulcerative colitis; amebic dysentery; bacillary dysentery; acute infectious diseases such as typhoid fever, cholera, pneumonia; certain prolonged constitutional and metabolic diseases such as are seen in the terminal stages of nephritis, with uremia; and poisonings from such chemicals as lead, mercury, arsenic. This leaves two interesting groups of disorders to consider which affect the colon and result in the passage of frequent stools. First, the group of so-called food poisonings, which generally prove to have originated in some other cause, frequently simple, acute, short paratyphoid infections with lesions chiefly in the small intestine. It is questionable how often a true colitis is thus produced. Second, the deficiency diseases such as pellagra, pernicious anemia, sprue, and the like, which are often associated with markedly disturbed colons. In most cases a real colitis does not exist, although it may develop, due to the lowered resistance of the patient. Frequently the cause lies in a disturbance higher in the gastrointestinal tract, which imposes upon the colon unusual strain of the digestive function, and thereby upsets its functions.

We may hence say "colitis," if expedient, but this term must be amplified and modified, and we must ultimately lead this individual to the general understanding of spasticity and irritability and of the defensive mechanism of the pouring out of mucus.

NATURE OF FUNCTIONAL COLOPATHY

Since the syndrome of the spastic, irritable colon is a visceral neurosis (in some respects akin to asthma) and exists only in those with unstable or poorly coördinated nervous systems, it is necessary for the physician to be thoroughly familiar with the subject, as he must become a teacher and must develop a proper mental attitude in his patient, perhaps change entirely his patient's habits of living and environment, as well as his mental outlook.

Since the sufferers are mostly intelligent and highly analytical (though most mistaken) and have been gleaning information from reading, radio, and friends, they come to the doctor with a phobia of some disease (generally cancer) and an obsession—constipation. It matters not that at the time advice is sought there may be five to ten loose and mucous stools a day, with great pain; this is usually considered but an episode. The thing that matters is the constipation, which always comes, and their fear of its results. As Barker has said:

"The form of habitual constipation in which there is persistent spasm of the colon (hyperkinetic) often associated with paroxysms in which larger or smaller quantities of mucus are passed from the bowel is most obstinate and more and more difficult to treat satisfactorily, especially when it occurs in outspoken hypervagotonic constitutions."

Personally I have felt for a long time that the designation "atonic form" of constipation was misleading. With the fluoroscopic follow-up of a barium meal and the barium enema, we have learned that constipation due to relaxation of the colon tube is rarely seen and possibly never exists uniformly throughout the whole length of bowel at one time. It is conceded there are regions of relaxation and atonicity at times; just as there are of spasticity or overtonicity; and these vary. But it is the incoördination of muscular motor function, rather than its paralysis, that is at the basis of all constipation, except the definitely mechanical obstructive type. Of course we see large, lax, distended loops of bowel in redundant colons at times, and we see large, boggy, lax cecums dipping low in the pelvis; but I have felt that the spasticity and overirritability of other parts of the tract were responsible for the loss of tone and of the decompensation apparent in these saccular loops or pouches. I know that I have been surprised many times, upon feeding one of these apparently atonic colons a roughage diet, to see how quickly signs of irritability will follow with loose stools, mucus, and abdominal discomfort.

INNERVATION OF THE INTESTINAL TRACT

The large and small bowel are controlled directly by the vegetative or autonomic nervous system. Briefly stated, the autonomic nervous system supplies two sets of fibers to the intestinal tract.

The *parasympathetic* (craniosacral), notably the vagus, is the activator, carrying fibers which increase secretion and motor activity and, if overstimulated, cause the excessive formation of mucus and lead to colic (vagotonia).

The *sympathetic* system (with its paravertebral ganglions) is the inhibitor or depressor, the direct antagonist of the parasympathetic. Stimulation or activity of this system leads to relaxation and loss of tone and to checking of secretion (sympathicotonia).

Finally, in the walls of the bowel exist the nerve plexuses (enteric system) which directly control and instigate certain activities: Auerbach's plexus, chiefly concerned with peristalsis, and the serosal plexus with muscular tonus of the bowel. These activities are, of course, directly affected by the parasympathetic and sympathetic systems and through these indirectly, but nevertheless vitally and profoundly, are affected by the brain with its various mental and emotional states.

MOTOR AND DIGESTIVE FUNCTIONS OF THE SMALL INTESTINE

Food leaves the stomach in a semifluid state, after being held up by the pyloric musculature for several hours, and then passes rapidly through the small intestine in three or four hours, to be held up slightly at the ileocecal valve. The secretion (succus entericus) of the small bowel, poured out by its glands, includes erepsin, arginase, nuclease, lipase, various carbohydrate-splitting ferments and enterokinase, which activates trypsin. The absorptive activity of this twenty feet of gut is very great, for here the bulk of the soluble products of digestion and digestive juices themselves are absorbed.

MOTOR AND DIGESTIVE FUNCTIONS OF THE LARGE INTESTINE

A semifluid food residue enters the cecum. The glands of the large bowel secrete but few ferments (perhaps a little erepsin) and much mucus. Its digestive activity is due mainly to bacterial action upon food products; hence the colonic flora is of considerable importance. Much water and some diffusible salts are extracted in this part of the intestine, particularly from the cecum and ascending colon, and normally the contents become a soft paste before being passed on to the transverse and descending colon.

In health a fairly solid, formed mass reaches the sigmoid and rectum. When the fluid contents of the cecum are projected rapidly to the distal colon, all the ills of intestinal indigestion result: irritation, fermentation, impaired absorption of intestinal gases, colonic spasm and pain, and systemic toxic effects. On the other hand, when the contents of the proximal colon are too long held up by dysfunction of the peristaltic and other motor activities, the dry, inspissated residue produces a similar result, though with different characteristics. In either of these states a heightened irritability of the neural and muscular mechanisms of the colon exists, leading to spasms, an incoördination of the colonic contractions and often to hyperactivity and perverted activity of the mucous glands.

Normally the colon has pendulum movements that mix its contents and aid in absorption; and peristaltic waves that send these onward to the distal bowel. But also of great importance, particularly in the cecum and ascending colon, are the antiperistaltic waves or contractions that result in the retention of the contents in these parts, especially the cecum, and thus, through this favorable stagnation, provide for bacterial digestion, absorption of fluids and soluble products, and the proper concentration of the excreta. It is this function of the digestive process that laxatives and enemas interrupt.

In functional colon disturbance, a state of visceral neurosis, we find (*a*) spasm, most pronounced in the descending and sigmoid colon; (*b*) peristalsis and antiperistalsis greatly increased in the cecum and adjacent bowel with prolonged stasis; and (*c*) excessive mucus secretion.

ETIOLOGIC AND CONSTITUTIONAL FACTORS AND INDIVIDUAL TYPES

A large proportion of the habitually constipated and irritable colon group are of neurotic constitution. Undoubtedly the constitutional factor has not been sufficiently emphasized from an etiologic standpoint. As a class they are unstable, hypertonic, introspective, worrying, anxious, and usually asthenic. The intestinal complaint may be but a local manifestation of a general spasmophilic tendency. Vagotonia is frequently apparent. Migraine is common, and asthma in the family history is not infrequent, as also are other allergic manifestations. Spareness, undernutrition, visceroptosis, active mentality, and a tendency to "go on their nerve" are outstanding characteristics. Wide pupils, erythemas, sweatings, irritable heart, variable blood pressure, fatigability, and affective states abound.

However, while the underlying neurosis is the essential factor, all neurotics do not have irritable colons, and to consider the neurasthenia as the only provocative factor of the disturbance would be a grave error. States of debilitation and exhaustion from many causes may be just as important: accompanying infections; inroads of childbearing; mishandling of the intestinal tract from laxatives and enemas, etc.

The shock to a nervous system of a thyrotoxic episode may be enough to insure both the emotional and autonomic imbalance necessary to produce a colonic dysfunction. We have had experience with such a case recently. A woman, age forty, was operated on two years ago for toxic adenoma of the thyroid. Following this, the irritable colon syndrome blazed forth beyond control, precipitating a complete physical and nervous break. So distressing were the abdominal symptoms that an exploratory operation was undertaken and the gall-bladder and appendix were removed. The results were even more disastrous, and it was not until hospital treatment with rest and rigid colon management was instituted, including psychological control and an understanding that her symptoms did not mean organic disease, that any improvement resulted.

Such other intoxicants as lead and tobacco must be considered. Emotional crises, the wear and tear of life, all bring in extraneous influences enough to set off functional disturbances held in abeyance. Intestinal neuroses diminish as we descend the social scale.

The problems of infection or other organic disorders in adjacent abdominal organs such as the "chronic" appendix, gall-bladder, kidney with ureteral kink or calculus, prostate, and women's pelvic disturbances are vexing. More mistakes are made by operating than not. Twelve years ago I felt great enthusiasm in undertaking the removal of these near-by abdominal "irritation foci." Today I am pessimistic as to the value of such procedures, and think that the surgeon had best stay out of the "functional abdomen," except for absolutely necessary relief of acute surgical conditions.

One such experience I recall, the case of a woman of thirty with mucous colitis following a run-down state and an emotional strain due to the illness of her young child. A large, tender right ovary was found and a rather active endocervicitis. The ovary and appendix were removed. Her symptoms became much worse, and she was practically an invalid for a year. She still feels that that venture was a ghastly mistake. Several years later exactly the same situation again arose, and her left ovary was enlarged to eight or ten times the normal size, with tenderness and pain. Conservative treatment resulted in relief in one or two months at a great saving to her, financially and mentally.

In many patients these evident and distinctive features of nervous instability and hypertonicity are not casually apparent. Just as in migraine, the individual may seem most phlegmatic, reasonable and composed, and it is only when under strain, physically or mentally or both, that the nervous instability can be recognized. Such an instance arose in the case of a professional man suffering from acute epigastric pain exactly simulating a duodenal ulcer. The periodic recurrences were so intense that penetration or perforation was feared. The patient was calm and composed while giving his history and being examined; but inquiry elicited previous episodes of colon mucus and irritability and the roentgen examination was negative except for spasm. Once suspected, other features and reasons for nervous instability were disclosed.

SUBJECTIVE AND OBJECTIVE FINDINGS

Seventy-five to eighty per cent of these disorders occur in women. The age average is about thirty-five to forty years, but the condition may occur in the third to fifth decades. Constipation and abdominal discomfort, often amounting to the severest pain, simulating disease in other organs, are the leading complaints. An abdominal unrest is evident, and I have often marvelled at the apparent terror that a sense of rumbling, gurgling, or bowel tremor which they describe produces. In the more irritative types, equally profound is the effect of the appearance of mucus, and most detailed are descriptions of the quantity of jelly-like masses, strands and strings of it. The discomfort is described as a pressure sense or a feeling of stoppage. Often a ball or lump or feeling of tightness is described, and the hand is usually placed over the lower abdomen, more commonly to the right, but the discomfort may involve either or both sides.

The pain is usually a dull, continuous ache, which may be general or localized. A gnawing sensation is described frequently. It may be spasmodic; but it is not rhythmic, and not of the relentless immobilizing character of an acute inflammatory condition. It may be agonizingly severe (to this particular patient) and require, rarely, a hypodermic injection such as pantopon; in which case it is accurately localized over the particular part of the colon in spasm. Ryle speaks of it as a bearable to major colic, located over the colon or diffuse, lasting hours to days, of variable frequency, and occurring generally two or three hours after food. It will interfere with work, greatly depress the sufferer, but rarely disturbs sleep. Heat and rest produce relief, as generally will also a bowel movement. The keen observer will detect the excessive degree of complaint, the hysteria-like attitude as being excessive compared to the objective findings, and realize that he is dealing with a barometric abdomen. The constipation may be mild, but generally is quite obstinate, and for intervals may be excessive.

As the nervous irritability increases, more frequent periods of diarrhea appear, until there may be established a regular interchange of several days of small, dry constipated stools, with a shorter period of days of violent diarrhea with watery stools and mucus. In the constipated period there may be the steady, dull pain; in the diarrheic period the severe paroxysms with passage of sheets of mucus. The stools are always unsatisfactory to the patient, difficult to evacuate, and may be small, hard and dry, or of small caliber, mushy or watery. They are negative microscopically for pus, blood or parasites. Cathartics and enemas are being invariably used. A remarkable fear of the constipation and of systemic poisoning exists. Most of these people believe that an organic obstruction or block exists in their intestines somewhere.

There is chronic fatigue, chronic indigestion, and coated tongue. Often it is esteemed a virtue to raise gas. A daily consideration of the state of the bowels has become the most important duty of life. Flatulence and gas are more subjective than objective. It is estimated that, normally, a liter of gas (non-absorbable; nitrogen, hydrogen, and hydrogen sulphid) is passed from the rectum daily,

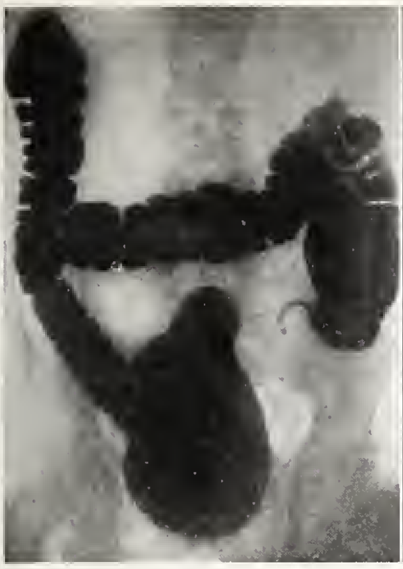


Fig. 1.—Normal colon.

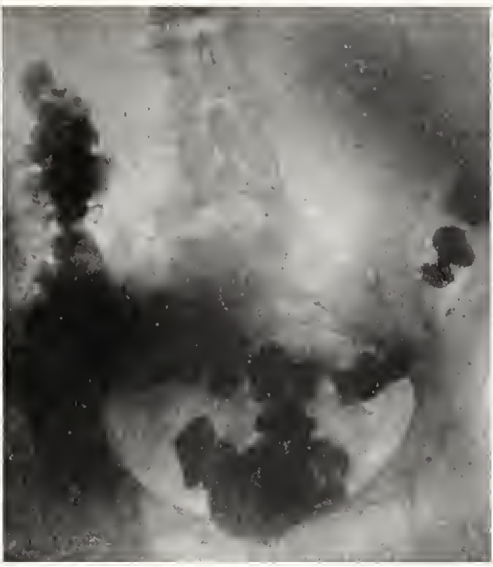


Fig. 2.—Spastic, irritable colon, with empty sigmoid, ptosis, distended cecum and signs of hypertonicity.

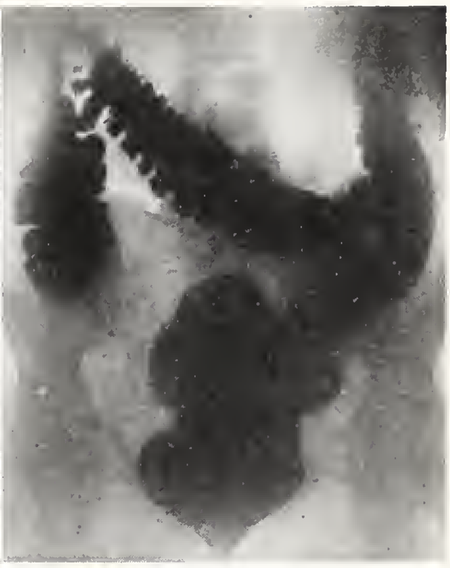


Fig. 3.—Local, irritative spasm at hepatic flexure of colon, producing pain simulating biliary colic.

and much absorbable gas (carbon dioxid and methane) eliminated via the circulation through the lungs. Undoubtedly spasm of the bowel, cecal stagnation and congestion of the colonic wall disturb this process. Often fermentative intestinal flora must be controlled. Elmer Eggleston estimates that 22 per cent of this group have had their appendices removed (so-called chronic appendix) and five per cent have had their gall-bladders removed, without improvement. A failure to analyze symptoms properly and a lack of knowledge that the spasm in the distal colon leads to retention, distention and soreness about the cecum, not improved by any surgical procedure, has led to these unrewarded appendectomies.

The degree of gastric acidity is variable. Friedenwald reports, in 411 cases, normal hydrochloric acid findings 40 per cent, hyperchlorhydria 27 per cent, and hypochlorhydria and achylia 32 per cent. Personally, I have found achlorhydria quite common in the more chronic cases, while the younger patients with more acute symptoms have a hyperacidity.

When the digestive disturbance simulates duodenal ulcer, a differentiation can be made when it is noted that the distress is over a wider area, more variable, not so classically and typically relieved by food and alkalis; that it may occur on awakening in the morning before breakfast and is often relieved by bowel movement or enema.

As I have said before, the paroxysmal seizures may simulate gall-bladder or ureteral colic, and the dull lower abdominal ache, pelvic disease in women. Occasionally the severest shooting rectal pains occur. Objectively, aside from the general constitutional make-up as described previously, and the apprehensive mental state, the most significant physical findings is the consciousness of examining a markedly hypersensitive abdomen, which will flinch almost as it is touched, and to which light pressure on the skin is almost as distressing as deeper palpation. The ropy or cord-like sigmoid may or may not be felt. One is impressed with the general sensitiveness of the abdomen. More characteristic, but present in only a moderate percentage of cases, is the abnormal cecum, either firm, prominent and resistant, or lax, boggy, bag-like and distended with material, gas and fluid—both tender, and lying low in the inguinal region.

SIGMOIDOSCOPIC EXAMINATION

The value of this procedure lies in the essentially negative findings, thus ruling out early ulcerative colitis, rectal ulcer and growth. It should always be made. The anal sphincter is commonly excessively tight, and spasm of the musculature is seen, especially if the sigmoid can be reached. The membrane is usually moist, red, but does not bleed easily, and mucus is usually encountered as masses, or glairy strings, or covering the whole rectal wall. If this is wiped off, the membrane is normal. The tight sphincter, the irritable rectum (which is almost invariably empty), the mucus and the essentially normal membrane are characteristic.

THE ROENTGEN-RAY EXAMINATION

The x-ray examination may demonstrate nothing but an apparently normal gastro-intestinal tract, and our chief dependence upon this type of investigation is for ruling out, so far as is possible, other pathologic conditions. It is exceedingly necessary and valuable, however, in studying the degree of irritability present at that time (realizing that it may be quite different another time) and to note the position of the flexures, the presence of redundant loops and diverticula. The most important procedure is to follow the barium meal down through the tract, to judge approximately of disturbance of motility, degree of irritability, stasis, and fermentative processes.

The opaque colon enema relaxes spasm often at first and its chief value lies in the better examination it affords for organic lesion and study of the contractility of the bowel after evacuation. The normal bowel is usually only partially empty (see Fig. 1), while the irritable group leave only a trace of barium in the colon. Here again the question of atonicity vexes us, as I have seen such

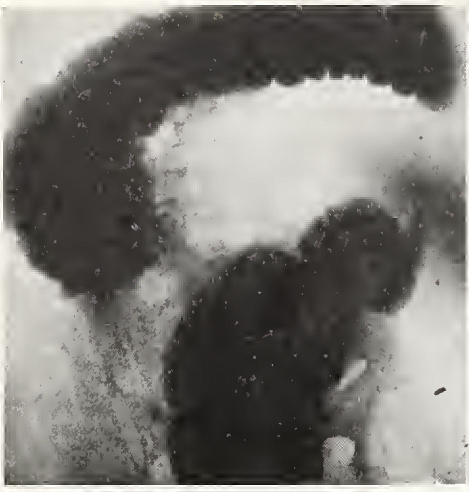


Fig. 4.—Marked spasm of descending colon with distention and delay in cecum and proximal colon. Clinically, acute distress and soreness in right lower quadrant simulating appendicitis.

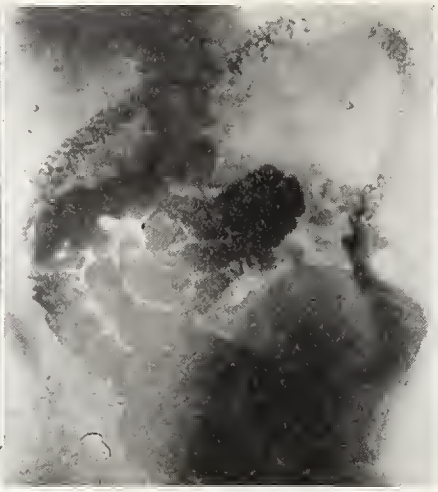


Fig. 5.—Feathery appearance of descending and transverse colon (resembling appearance of small bowel) after evacuation of irritable colon.

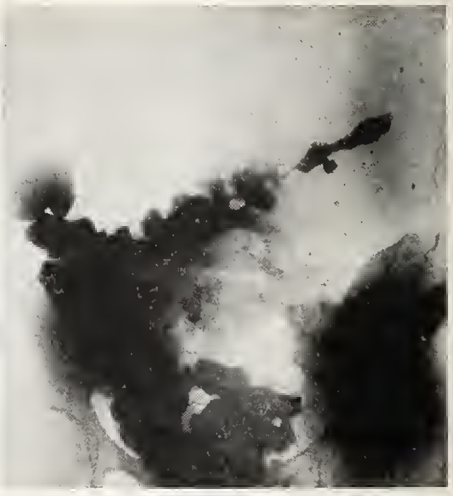


Fig. 6.—"String Sign." Mucus and barium in sigmoid and splenic flexure appearing as a thin irregular string, due to tight contraction of this part of large bowel after evacuation.

an enema remain in the bowel for several days in women who had been previously having frequent stools.

We always look for, and frequently find, general spasticity (see Fig. 2); segmental irritative phenomena (see Fig. 3); hurried or delayed emptying; a spastic sigmoid with a big dilated cecum (see Fig. 4); a feathery descending colon like the small bowel in films after evacuation of the opaque enema (see Fig. 5); and occasionally (approximately 10 per cent) the "string sign" (see Fig. 6). When present this sign is extremely characteristic and is produced through the spasticity of the bowel and the disturbed peristalsis, leading to a general contraction down upon the contained mucoid material. A thin, irregular string of mucus and barium extends from the rectum up and over to the transverse colon.

PROGNOSIS AND TREATMENT

Most of these individuals finally get well, but relapses occur, according to the extraneous and environmental conditions they have to meet. One author says that 90 per cent recover. I suppose it mostly depends upon how they come to understand and help themselves. Some of my stormiest cases have surprised me (often after months or a year or two of struggling) with a return to relative stability once a convincing insight into the nature of their trouble has been gained, and proper management for the overtonic colon has been instituted with a nonirritating but properly nutritious diet.

When the acutely disturbed case is first seen, bed rest, relaxation, and reassurance are the first essentials. Eggleston informs me that at this stage he accomplishes most by putting the patient on a milk diet with bed rest, sedatives, and antispasmodics. At any rate, a liquid or very limited bland diet should be given. The problem of constipation usually immediately ensues. Warm rectal oil retention enemas are generally necessary and advisable. An occasional small, warm saline enema may be necessary at first, but should quickly be discontinued. Usually regular colon irrigations are inadvisable and only postpone the day of instituting a proper bowel habit.

Along with rectal oil the gradual building up of the diet with soft, nonirritating pulp, is to be most relied upon. It may be necessary to add dissolved agar (American agar) as a gelatine, and even some lubricants, preferably in the form of pastes. Antispasmodics such as belladonna, atropin, and particularly novatropin, nerve sedatives, particularly luminal and, at times, bromid, with mild hypnotics are generally necessary at first. A rectal suppository at night with luminal, belladonna, menthol and a neutral coating substance is extremely helpful. According to evidences of general nervous irritability, spasmophilic tendency, etc., the use of calcium, parathormone, theelin, and viosterol must be determined. The use of colloidal kalene in certain fermentative problems, of acidophilus and brewers' yeast must be determined for the individual case. Symptomatically, dilute HCl in one case and moderate alkalinization in the other, according to the gastric content, is indicated. Although we have probably overemphasized the importance of vitamins, still, we must see to the proper vitamin content of our food, and administration of cod-liver oil, viosterol, brewers' yeast, fruit juices, pureed vegetables, fresh meats, butter and cream will have to be determined by the tolerance of the particular gastro-intestinal tract under treatment.

While much might be said about the diet, further discussion is impossible in this limited space. It should be nutritious in addition to being nonirritating, and while it may need to remain bland in type over a long period of time, it may be quite general. It should never be coarse, and should never bring on a constant feeling of intestinal disturbance and fermentation. Occasionally very definite allergic responses can be discovered, as one of my patients cleared up rapidly after eliminating eggs from her diet, and another after eliminating shellfish, along with the other measures instituted. Still, I feel that on the whole, intestinal allergy is not usually an important factor in the causation of the condition. In general, medication should be minimized and gradually eliminated.

This brings us to what I consider finally the two great essentials: the psychological or nervous aspect of the problem and the physical fatigue and exhaustion. We can make no headway if these people are not made to rest and build up physical reserve first. If they overdo physically or mentally, all their symptoms will return. From the psychological standpoint, we must educate these people as to the nature of their trouble. We must teach them how to relax, must disabuse their minds of their fears, and hold out the hope that by gaining control over their nervous system a cure will be instituted. It requires patience and endless repetition. To convince the patient properly of our sincerity and that we know whereof we are speaking, we must begin by making a thorough examination. They must feel that we have overlooked no possible pathological condition. Then if they can come to understand that they can gain relief by (1) controlling the local colonic condition as they have been taught, (2) improving their general health and their weight and eliminating focal infections, etc., and (3) by gaining the proper mental balance and the right psychological attitude toward their particular problems in life, they may keep well.*

384 Post Street.

DISCUSSION

Franklin R. Nuzum, M. D. (Santa Barbara).—Doctor Kruse's paper is an excellent presentation of the subject. His reference to the nonexistence of the so-called atonic form of constipation is contrary to what has been handed down in textbooks for many years. An appreciation of this fact alone rewards one for a careful reading of this paper. His explanation of the simulation of the so-called chronic appendicitis in patients who have a functional disorder of the colon makes very clear the reason why approximately 22 per cent of patients with this type of disturbed bowel function have lost normal appendices and another five per cent have lost gall-bladders, operative procedures which did not aid the bowel condition and as a result of which many were handicapped in an ultimate recovery from their functional disturbance.

The author emphasizes the neurotic tendencies of patients with functional disturbances of the colon, and yet in citing the etiology he does not overlook the possibility of other conditions. It is to be regretted that he has not dealt with treatment in the same specific manner as other portions of his subject are handled. He does stress, however, the importance of the nervous aspect of these individuals, of the need for a proper psychologic handling, of education, of the elimination of physical fatigue and exhaustion.

Allergy has quite recently been emphasized as an important etiologic factor in functional disturbances of the bowel. To this end, skin tests for food sensitization have been widely used. The results in my own experience have been variable and for the most part unsatisfactory. When a patient is suspected of being sensitive to specific articles of diet and when help is not obtained by the use of skin sensitization tests, elimination diets, as suggested by Dr. A. H. Rowe, are certainly indicated. A proper use of elimination diets is not simple, but the matter is of enough importance to warrant a careful use of this method of procedure. Under such circumstances marked help can be obtained when the other method of testing for food sensitization has failed.

A careful study of this excellent paper will well repay any physician dealing with this type of patients.

⁂

R. Manning Clarke, M. D. (1219 Hollingsworth Building, Los Angeles).—Doctor Kruse deals with this subject in such a straightforward and practical manner that its reading is enjoyable, even though it deals with an old and much hackneyed subject.

It is good to hear the doctor say that he thinks it is wise for the surgeon to stay out of the functional abdomen. The internist has the demonstration of this constantly before him. The problem is: How can we educate the younger and less experienced surgeons so as to save these unfortunate occurrences before they happen.

I have read all my life about the atonic colon, and I have yet the first one to see. And I am pleased to note that Doctor Kruse also feels skeptical about this type of condition in the colon.

While I have enjoyed this entire paper, yet I have enjoyed Doctor Kruse's discussion of the treatment of the colon more than any other part of the paper. I like it because it is conservative and because he has left out a lot of bizarre things that are worse than useless. I feel that everything he has discussed under treatment is essential and fundamental. It would be very easy, of course, to go into immense detail in following out these lines of treatment, but each procedure that is important has been sufficiently mentioned to bring it prominently to mind.

⁂

Herold P. Hare, M. D. (1930 Wilshire Boulevard, Los Angeles.)—Doctor Kruse's paper appeals because of its comprehensive simplicity and sincerity. The syndrome he discusses is well portrayed, the underlying etiologic factors clearly pointed out, and the various aspects of treatment are logically developed.

The whole subject of visceral neurosis with its frequent severe and baffling symptomatology certainly cannot be well understood by many physicians, else there would not be such an array of operative mileposts along the way. Something like 25 to 30 per cent of mistaken diagnoses, often with harmful surgery, is no tribute to medical acumen. Doctor Kruse particularly mentions the desirability of avoiding surgical procedures in these patients, even though there may be some evidence of the presence of a low-grade focal infection. At times the decision is a difficult one to make. One regrets that there is no simple diagnostic procedure for adequately classifying these conditions, but a proper appreciation of this very fact is a stimulus to better study and more careful correlation of our findings.

Regrettable surgery is not the only mistake to be laid at the door of the profession. Illogical and sometimes harsh methods of medical treatment are still too prevalent. If the syndrome under discussion is in reality a visceral neurosis—a dysfunction or unbalance of the nervous control of the colon—and is greatly influenced by a wide range of conscious and subconscious stimuli, then treatment applied primarily to the colon is necessarily inadequate and fundamentally illogical.

In general, the whole treatment as outlined is sedative, with the emphasis placed on rest, reassurance, education, elimination of worry, and, at times, change of environment. The importance of a nonirritating diet is well understood. The proper use of the sedative drugs necessary at times and the least irritating ways of combating the constipation have been indicated.

The age range for the onset of this disorder was stated as the third to the fifth decades of life. I feel that various phases of the syndrome are not so infrequently seen in much younger girls, though the severity of symptoms here is less extreme. It is a little difficult to believe that over 90 per cent of these patients can be cured. Certainly unusual patience and persistence is an essential part of the treatment.

---

* References will be given in the reprints.

MURDERERS' ROW*

A NEUROPSYCHIATRIC STUDY OF THE PATHOLOGIC BEHAVIOR OF TWENTY-FIVE MURDERERS WHO KILLED THIRTY-THREE PERSONS

By Thomas J. Orbison, M. D.
Los Angeles

Discussion *by Joseph Catton, M. D., San Francisco; Thomas G. Inman, M.D., San Francisco; Paul E. Bowers, M. D., Los Angeles.*

THE first five murderers belong to the defective mental development group, and would be classed as morons if judged by such accepted yardsticks of intelligence as the Stanford revision of the Binet-Simon scale. One of them closely approached the imbecile level, and one other, in addition to his moronity, was epileptic.

GROUP I. DEFECTIVE MENTAL DEVELOPMENT GROUP

(Referred to hereafter as D. M. D.)

These five morons killed, or helped kill, six persons—three men, one woman, one boy, and one baby. The nature of these murders, the methods employed, the motivating factors, the behavior of the participants during and after the actual murder, and their futile attempts to evade the consequences of their fear-charged acts, contribute a set pattern of behavior phenomena that seems to be characteristic and significant.

REPORT OF CASES

Cases 1 and 2.—The first murder was the result of a frustrated attempt at burglary that was planned by a "master mind" (let us call him), but which was attempted by two morons who were made use of for the purpose. Both of them were dishwashers at the time.

One was the child of respectable, law-abiding, "religious" parents. The family had apparently always been an ordinary, inconspicuous social unit. But a study of the family tree of this youth demonstrated hereditary factors that must have had a definitely malevolent influence. When he committed his murder he was seventeen years old with a "mental age" of eight years plus. He had drifted away from home and, after many attempts to float himself, had found his occupational level in dishwashing.

He and a chum of his (No. 2 of this series) were approached by another man who proposed that they rob a certain house of well-to-do people in a residential locale in Los Angeles. He gave them the plan of the "lay-out" and directed them how to proceed. Unfortunately for the "master," he did not know that these tools could not function successfully when confronted by unforeseen problems, because of their lack of intelligence. They succeeded in entering the house, after first subjecting themselves to detection in a typically moronic fashion, when they sat in a hammock on the front porch of the house, smoking cigarettes, while waiting the hour appointed for their entering. Upon entering, they then met the problems for which they were not prepared. They made their way to the second floor. One of them entered the bedroom of the owner of the house, an elderly retired lawyer; the other found himself in the bedroom of a daughter, who awoke and militantly assaulted the intruder with a hairbrush. He fled incontinently, making a great ado.

The scuffle awakened the father, who sat up in bed. The other armed moronic and would-be robber was at loss just how to react to a situation that was for him a novel one; so he pointed the gun he held at what seemed to him a menace and pulled the trigger. Frightened, he turned and fled down the stairs and away from the unpleasant situation he had raised, without knowing what damage he had done and without any booty.

The reactions to unexpected conditions shown by these two were typically D. M. D. (moron No. 2 was rated at the nine-year intelligence level). Their capture was speedily effected, as they were incapable of covering their tracks. Both should have been identified as mental deviates while in school. The court sentenced each of the killers to die.

* * *

Case 3.—Murderer No. 3 was twenty-eight years old with a "mental age" of nine years. He was known to be epileptic, and was treated more like a son than a farm hand by the rancher and his wife who employed him. Other than with his "fits" he had never been a problem to them, and his work seemed satisfactory.

One day he left his team in the field and went to the house, where he met his employer. Just what took place at first is not known, but the epileptic moron F. killed his employer with an iron bar; his explanation later was that they had an "argument." From what he afterward said, it appears that the wife came upon the scene and F. deemed it necessary to kill her, too.

He was then confronted by new problems—what to do to cover up his acts and evade their consequences, and what to do with the baby of those he had killed. He solved one problem by pouring gasoline about the barn and setting fire to it, and then throwing the dead bodies into the fire. The other knot he untied by throwing the baby also into the fire.

His attempt to escape the consequences was made in a typically moronic fashion by taking a circuitous path through muddy fields to the near-by town, leaving a plain trail, not thinking to remove the telltale mud from his boots. Reaching town, he played pool for a time and then went back to his room at the ranch, where he was quickly apprehended and arrested, much to his surprise. Typically moronic behavior.

Hereditary taint: The family history of No. 3 indicated that his maternal grandfather was insane, as was a brother of his mother.

He, himself, should have been recognized as a potential menace while still in school. The jury found him guilty and sane and he was sentenced to die.

* * *

Case 4.—Was that of a 17-year-old boy who killed a young companion with a club. I examined him as "expert appointed by the court" and found evident mental defect of such a nature as to classify the killer as near the imbecile level. The wise judge and coöperative district attorney took the case off the calendar, and the killer was eventually sent to a suitable state institution, incidentally saving the county a costly trial, as well as treating the case in hand in an eminently just manner.

* * *

Case 5.—The last of this series was implicated in the murder of a man in a bank hold-up. He was acting as a look-out at the time of the murder and was prepared to participate, if necessary, by carrying a loaded gun. Becoming confused he made scarcely any attempt to escape and was soon arrested.

Examination of his mental status by a psychologist and myself brought out that he was mentally defective and belonged to the moron group and that what he did had been planned for him and not by him. The court sentenced him to die.

COMMENT

One outstanding impression that comes to one who reviews these five cases is that only one of them was treated with complete scientific accuracy, therefore with complete justice.

---

* Read before the Neuropsychiatry Section of the California Medical Association at the sixty-first annual session, Pasadena, May 2-5, 1932.

Another is that all of them should have been not only identified for what they *were* while yet in school and prior to any overt crime, but also that suitable preventive measures against them should have been put into play. Had these been effected, six innocent victims would not have perished.

GROUP 2. CONSTITUTIONAL PSYCHOPATHIC INFERIOR PERSONALITY GROUP

(Referred to hereafter as C. P. I.)

After exhaustive examinations, totaling many hours, the eight murderers of this series were classified as C. P. I. They killed twelve persons—five men, four boys, two women, and one baby. All were tried for their acts. The defense advanced, in every case but one, was insanity, legal insanity. A selected number, though not medically insane, did come under the classification of "legally insane," judged by the legal yardstick. The seeming anomaly exists because the legal definition of insanity differs from all of the medical definitions, which regard the insanities as forms of mental sickness and, therefore, medical entities. It is this difference between the law and psychiatry that is so often the root of the seemingly insuperable impasse which confronts the medical expert and courts of law.

REPORT OF CASES

CASE 1.—The first C. P. I. murderer was a young male who ran what the newspapers picturesquely called a "murder farm." He killed at least three boys. Ten hours were devoted by me to the personal study of this young man. My conclusions as to his mental status were that he was definitely C. P. I. and belonged to the subgroups (*a*) sex deviate; (*b*) emotionally unstable; (*c*) pathologic liar; and (*d*) paranoid personality.

He proudly asserted his "love" for his 16-year-old brother. He exhibited a patent sexual libido when he spoke of this brother, and as he described to me his sensations when he killed his victims, who were all younger than himself, his facial expression became feral and lascivious as he exclaimed, "keen, keen!" when attempting to describe his emotions at those times. He was a glaring example of the pathologic liar: *e. g.*, claiming to have read "all of Dickens," he was unable to give the name of a single book; he promised a large sum of money to the special counsel for his defense, who came from Canada for the purpose, the murderer knowing that there were no funds available. To watch him preening himself to have his picture taken when he was told he was the "prettiest" (sic) prisoner to pass through the Los Angeles County jail, was a study in narcissism. The paranoid components of his personality were conspicuously brought out at the time of his trial for murder, when he dismissed counsel and attempted his own defense. This was running true to the same form displayed by Guiteau in the famous case following his assassination of President Garfield. In my opinion, the trial of the young man under discussion could, in more than one sense, almost be called a travesty of justice and the turning of a court of law into a circus, and an obscene circus at that.

I am of the opinion that this youth was legally but not medically insane, the opinion of the honorable jury to the contrary, notwithstanding. In a criminal action at law, to be legally insane one must be of such a condition or state of mind as not to know the difference between right and wrong in relation to the act committed and not to be able to appreciate the nature and quality of the act or acts. By this obsolete yardstick this murderer was (legally) insane. He was sentenced to die.

As to heredity, two of his paternal uncles were insane; one maternal aunt, a "religious fanatic"; his mother was a C. P. I. and a border-line D. M. D. as well.

* * *

CASE 2.—This case was a university graduate who had taken honors in oratory. All through his life he had done showy things and was looked upon for a time as a budding genius. His marital experience had been stormy. At one time he tried cattle ranching in Montana, without financial success but with much enjoyment in dressing for the part.

Some time prior to the murderous act of which he was accused, he came completely under the influence of a woman with evident appeal to the males of her acquaintance and he was only one of those whom she dominated. It was alleged that he came to this coast, where she was living, for the purpose of ridding himself of a rival and her of one whom she desired out of the way. The trial of this case was a cause celèbre some years ago and, prior to the Hickman case, held, I am told, the "publicity record" on this coast. The defense was insanity and very ably presented, as was also the prosecution. During the trial the defendant gave a display of "wisecracks" and other verbal courtroom "fireworks." The jury was twice "hung," but the defendant was not—nor was anyone else, for that matter.

* * *

CASE 3.—This was the double murderer and abductor, the young man E. H. H. He was nineteen years old and, while on parole at the time for other crimes, killed a man in a hold-up in company with another young man whom he influenced. He later came to Los Angeles and abducted a young girl from her school and held her for ransom, naming $1,500 as the sum he demanded for her release. Because the girl's home was openly patroled by police cars with their red lights aglow, he did not deliver her on the evening that was at first designated. In this he showed a higher level of intelligence than his would-be captors. They could have taken him after he had released the girl and obtained the ransom, as he at first intended to do, had they simply thrown a cordon around the block, allowing all cars to enter but none to depart unsearched.

Keeping himself aware of the closing in of the chase upon him, he found himself confronted by the necessity of hiding his victim. His judgment was that his escape could not be accomplished with her alive, so he did not hesitate to kill her. This he did by strangulation with a towel while she was tied to a chair. She did not know what was his intent, but believed him when he told her she was to be tied up for a few minutes while he went out for a newspaper.

The subsequent events followed each other logically. After carving up the dead body while the phonograph played, the killer calmly walked out under the nose of the police with the severed body of his victim packed into a dress suit case.

After a most ingenious set of successful attempts to escape, which included the taking of an automobile away from a man on a crowded thoroughfare in Los Angeles, after a careful scrutiny of the car to make sure it contained gas and oil for an extended trip, the killer actually drove north nearly to the Canadian line before he was finally caught. He was then escorted to Los Angeles by a great posse of police officials and newspaper men. A new record of publicity was hung up when this 19-year-old killer was tried. The courtroom became a theater and ran morning and afternoon shows to which admittance was only by card. Relays of notables, including "stars of the silver screen," visiting judges and an unbelievable lot of citizens strove to obtain good seats for the performance.

Nine hours' examination of this youth convinced me, first, that there was no insanity present, either medical or legal; secondly, that he was often motivated by abnormal thinking, characterized by puerile judgments; thirdly, that his whole behavior pattern, both criminal and noncriminal, was typical of a constitutional deviation from the norm that was characterized especially by an anesthesia—to call it such—of the emotional sphere that was of such a nature as to deprive its host of the ability to feel the slightest remorse or fear the consequences of the horrific acts that he knew, intellectually, were punishable and likely to be punished. At the same time he clearly demonstrated a paradoxical superior intelligence level. An example of this anomalous judgmental perversion was that he planned meticulously a difficult and complex set of acts that involved the risking of his own life and the taking of any others that might thwart him—all for the sum of $1,500 that he wanted in order to put him through a college course that was designed to prepare students for the ministry!

As to any sex angle in this case, there was none. His desires did not run along that line especially and he seemed to be quite normal in that sphere.

Heredity: In my opinion, this murderer's family history contains definite mental taint.

* * *

Case 4 of the C. P. I. group was a young woman of Italian parents, who set fire to the baby carriage in which her infant was sleeping, destroying them completely. The motivating factor in this case was a feeling of rebellion against the various thwartings in her home environment which seemed to her important. Examination showed her to possess a borderline adult intelligence level, but a perversely functioning judgmental apparatus. This young woman was given a life sentence.

* * *

Case 5 was a man who killed another man in a train hold-up. His behavior in this episode and prior to it through life, showed very stupid and ill-judged mental reactions. The killing itself was a superfluous "dramatic" gesture in an adult whose judgments were puerile but whose intelligence level was adult. He was sentenced to be executed.

* * *

Case 6 was a young negro who was considerably above the average adult intelligence level, but whose history included an attempt to burn a well-known resort hotel because of a fancied slight on the part of the white woman manager for whom he on various occasions showed a sex attraction. He once before this had barely escaped conviction of murdering a woman whose dead body showed undoubted evidences of sex assault prior to her death.

He was finally convicted of killing, with an iron bar wrapped in newspaper, a female Christian Science practitioner. His plea—or rather the defense advanced by his attorney—was insanity. The jury disallowed the plea of insanity and declared the defendant guilty.

Examination of the killer showed him to be definitely a C. P. I., who belonged to the subgroups (*a*) paranoid personality, and (*b*) sex deviate. He was excessively egotistic under a very quiet and smooth exterior, but his adult life was embittered by his resentment of the fancied antagonistic attitude of white people toward him, people he considered his inferiors but who he thought belittled him.

He had never experienced normal sex relations, but was strongly attracted to a certain physical type of white woman and got a perverted satisfaction out of hurting them (a kind of sadism). No evidence of insanity, either medical or legal, was found in him.

* * *

Case 7 was a deputy marshal in a New Mexico city, who killed one man and attempted to kill another. I examined the killer and concluded that there was no insanity present, but rather an implicit emotional instability and judgmental defect that was a complete explanation of the pathologic behavior he exhibited from time to time, being especially evident when he was mildly under the influence of alcohol, which aided in anesthetizing what judgment he ordinarily possessed. This man was freed on the plea of self-defense. In a shooting escapade later, he was shot and killed.

Case 8.—This was the most bizarre case in my series. The life history of this man in his thirties, if narrated in fiction, would probably be classed as too improbable for publication.

To narrate as briefly as possible only those episodes that are important for the purpose of evaluating the personality components of this man, one needs but sketch in the lights and life-shadows of a 35-year-old male who for many of those years was hidden away in an attic under the completest form of female domination in the person of the wife of a man who probably never knew he was in his house and yet whom the attic dweller speaks of as his "best friend" and a "noble character" after shooting and killing him. It is almost beyond comprehension that any intelligent man could or would subject himself to such a fantastic form of existence and successfully maintain it through many years and in two such widely separated cities as Milwaukee and Los Angeles. But the known facts seem to prove that such was actually the case. He undoubtedly possessed adult intelligence as measured by the accepted yardsticks.

During all the attic-dwelling years this human mole seldom left his attic, except when at night or at other times he could safely move like a ghost through the house, only to scurry back to his shelter when alarmed or when discovery might be expected should he remain outside his lair. He told me that he was made use of sexually by the woman, at times to excess; also, that she made constant use of him to help her about the house at safe times. He was a voluntary slave and menial—sexually and otherwise.

His whole life has been one of domination by others; first the woman, Mrs. O.; next a lawyer, whom he speaks of as one of her lovers; lastly, his own wife. As psychic influences, the first two may be looked upon as malign and the last as benign. It seemed to be true that two totally opposite sets of action patterns were exhibited by this particular C. P. I., as he was subjected to two different, and even antagonistic, *personal* influences, *i. e.*, Mrs. O., and later the woman he happily married. His "goodness" or "badness" seemed to be dependent upon two factors: (*a*) his innate ethical desire to do "right," and (*b*) the maintenance of the authority of the influencing agent. I believe the latter to be the more important. This man was freed by the statute of limitations.

OTHER GROUPS

Involutional Instability.—Two murders were committed by men in the involutional period of life and were motivated by perverted wish reactions that in each case had to do with the elimination of one who had become obnoxious.

One of them murdered his wife and then burned her body in the attempt to hide the evidences of his crime; the other, having armed himself, shot and killed a prominent bank official, having followed him into the courtroom, where he was to testify. The influences which had to do with poisoning this murderer's mind brought forward much newspaper speculation and discussion at the time the trial was on.

The second murder was a typical example of the effect of the mental explosives that are so frequently planted in unstable minds. Like mental bombs with time-fuses attached, it only requires an igniting word to light them, with devastating effect.

* * *

"Normal Killers."—Two of this series of murderers showed no evidences of constitutional fault or mental sickness. One of them was a 19-year-old youth who deliberately killed a younger boy over a sum of money. He was executed.

The other was a young cowboy in New Mexico who, while intoxicated, shot the city marshal and then tried to shoot his foreman and the deputy marshal, but was himself shot in the head with a load of buckshot. He later recovered from the extensive scalp wound inflicted and effected a successful jailbreak. My examination of the killer showed nothing abnormal in his psychic sphere. The murder and shootings were the result of a temporary toxicity due to alcohol. This young man effected a jailbreak and escaped.

* * *

Psychotic Group (Medically Insane).—Seven of this series were medically insane men. They killed ten persons as the result of their psychoses—delusional concepts, emotional imbalance, and faulty judgments being the motivating factors.

One other (an insane woman) barely escaped effecting an intended murder when the revolver she had carried into an attorney's office for the purpose of killing him was discovered hidden in a cigar-box.

No. 1 killed a former employer because of imaginary wrongs.

No. 2 killed his "sweetheart" and then developed an acute confusional psychosis. He was possessed of a low order of intelligence and had for years been a regular drinker of alcoholics. Only after eleven members of the Lunacy Commission had declared him insane did the judge of the Lunacy Court commit him.

No. 3 shot a doctor five times in a fit of rage.

No. 4 shot two men, who he imagined were poisoning him.

No. 5 had been released from Patton and then proceeded to kill a man whom he disliked.

No. 6, after being adjudged insane and paroled, killed a man.

No. 7, after release from Stockton, killed three persons.

All the above murders were the seemingly irrelevant acts of mentally sick patients.

COMMENTS

The bulk of these murders—twenty-nine out of thirty-three—were committed by two groups of mental deviates: (*a*) the constitutional deviates known as D. M. D. and C. P. I.; (*b*) mentally sick, psychotic, "insane."

It is a sad commentary that so many of these murders could have been prevented by ordinary common-sense foresight.

Five major formulations are outstanding:

1. Any true psychotic who demands a jury trial is potentially dangerous.

2. Most of the C. P. I. and all of the D. M. D. murderers of this series should have been recognized as deviates while yet in school. Therefore teachers should become aware of the significant factors relative to mental deviation; Hickman, Northcott, and all the D. M. D. should have been put out of association before they had killed any human being.

3. These cases must emphasize the fact that there is a vast and rigid difference between medical and legal insanity. The former has never been satisfactorily defined, whereas the latter has been since 1843, and is now, a defined legal entity. The fact is that insanity is essentially a medical entity, i. e., disease or sickness—in the psychic sphere; that it is so protean and kaleidoscopic in its manifestations as to be impossible of any definition that will define a particular type as well as all the other types. An attempt to define "fever" presents similar difficulties. A definition of sickness must, after all, be a description of symptoms that are typical of a medical entity group. The law, on the other hand, must define, and attempts to do so, in the matter of mental sickness. The necessity to do so is manifest. That it is unfortunate is just as obvious. The present-day legal definitions of insanity demonstrate the weak points of the attempt on the part of the law to define a medical entity. The law further attempts to define what is criminal insanity and what is civil insanity. An analysis will show that these definitions differ so that the same individual by the same court would be considered criminally sane and could be legally hanged for murder and at the same time be regarded as "incompetent" and unfit to take care of himself or his property, *i. e.*, insane (page 283, S. and K.) And yet the lawyers deride psychiatrists for giving "contradictory" evidence in medico-legal actions!

4. On the theory that insanity and constitutional mental deviation are essentially psychiatric entities, even though in certain instances there may be legal implications, it is my contention that the alleged criminal deviates should, in the first instance, be given an appropriate psychiatric examination under supervision in a suitable institution and for not less than thirty days in cases of felony. This procedure will do away with those pleas for exemption on the grounds of insanity that are the "last resort of a forlorn cause," but will protect the constitutional rights of the truly insane.

5. The only remedial treatment of the D. M. D. and C. P. I. is successful substitution of normal for abnormal mental characters either by engraftment, substitution, or reëducation maintained for a sufficient time to "take." A corollary to this is that when such a "take" cannot be accomplished after a suitable trial, then that individual is commitable. We do not hesitate to commit the mentally sick and we send smallpox cases to the pest house without consulting the wishes of the patients; but we allow politicians and sob sisters, both male and female, to prevent us from protecting ourselves from putting out of circulation even greater menaces, *i. e.*, those who *cannot* react to the rules we have found necessary to lay down for our own behavior, as well as for the behavior of those among whom we must live.

Finally: this series corresponds to every similar modern research.

616 Wilshire Medical Building.

DISCUSSION

Joseph Catton, M. D. (490 Post Street, San Francisco).—Doctor Orbison's paper is very interesting. It is important that from time to time those of us to whose fortune it falls to contact and to study large groups of caught offenders should report our findings and opinions. Out of the discussion which might result in the medical and legal professions and other interested groups should come suggestions for improved handling of the situations involved. The conflicts existing between law and medicine, as discussed by Doctor Orbison, are more apparent than real. I am with those who believe in looking for underlying unities of attitude rather than superficial diversities. Doctor Orbison admits that the law must define insanity as it applies to one or another situation where a person finds himself at the bar in some civil or criminal action. Then he joins with those of our confrères who criticize the law for the definitions it writes. He argues that the law is attempting to define a "medical entity." But quoting him, he says that medical insanity "has never been satisfactorily defined" and that for various reasons it is "impossible of any definition."

My position is this: When a medical man makes an adequate examination of a person as to his mental condition, he will state verbally or in writing: (1) That, in his opinion, the person has a psychosis (medical term for insanity); (2) that, in his opinion, the person is not insane; or (3) that he does not know.

Are the criteria which lead to these statements of opinion some mystical concepts which are not susceptible to expression in plain English? If they are, then we are metaphysicians rather than physicians; and psychiatrists as a group should be divorced from their present confrères in medicine. I would quote Charles Mercier: "He who pretends that his thoughts are too profound to be expressed intelligently in the English language must not count on always finding readers sufficiently gullible to accept his pretense. Sooner or later he will be called upon to stand and deliver his meaning, and if his wallets are found to be empty he will have no one but himself to thank for his humiliation." Psychiatrists are at a crossroads. They have forced the law to define what Doctor Orbison has rightly termed a "medical entity." The law, however, down through the centuries has sought to be the mouthpiece of authoritative opinion in each special field which might be concerned in particular decisions and judgments. If the thoughts of psychiatrists as to what defines the limits of sanity and insanity are either so profound or so muddled that they cannot be expressed intelligibly, then, as Mercier has said above, the psychiatrists' "wallets are empty" and psychiatry has itself to blame if it be humiliated or disturbed by the apparent conflict between medicine's and the law's concepts of insanity. I share the opinion of those psychiatrists who believe that our wallets are not empty. I have in preparation a paper, to be published shortly, which deals with the matter of the medical definition of sanity and insanity, and which could be read in conjunction with this interesting and important paper of Doctor Orbison's.

⁂

Thomas G. Inman, M. D. (2000 Van Ness Avenue, San Francisco).—Doctor Orbison has directed our attention to one of the many ills which assail the integrity of our social system. The illustrative cases only too well lend support to his views. His suggestion that the accused seeking relief under the insanity defense be subjected to observation in a suitable institution should meet with approval. If all culprits pleading insanity as a defense were automatically consigned to a ward for the criminal insane in a state institution for a period of six months, the issue depending upon the observations of the medical staff, resort to this means of escape would be less frequent. Certainly the accused, whose plea of insanity is presumed to be honestly presented, could not object to such a procedure.

Thinking people are coming to believe that the insanity defense has been carried too far and that the expert is selected, not for his skill in interpreting mental processes, but for his ability and willingness to confuse the issue and thus create an element of doubt in the minds of the jurors. It is believed that many experts will testify with equal candor for either side. When the members of a jury get this impression they take the matter into their own hands, a circumstance which might adversely affect the rights of the individual or of society, as the case may be.

If it is sometimes difficult to state positively that an individual is or is not suffering from a psychosis, that problem sinks into insignificance beside the impossible task of predicting the future conduct of a mental defective. The intelligence factors resident in the cerebrum, fixed at or about maturity, are susceptible to fairly exact measurements. But the emotional elements, upon which so much of human conduct depends, are subject to great variations from time to time. Thus, while it is possible to state, within certain limits, the mental capabilities of an individual, one can only make an approximate estimate of what that individual's reactions will be to a given situation.

Defectives showing criminal tendencies should, for the safety of society, be segregated. The same may be said for criminals not showing evidence of intelligence defects. But to immure these individuals with the intention of teaching them to be honest, trustworthy and incorruptible would be time wasted. Outside of the institution they would soon learn that the affairs of society are not conducted according to these principles. They might also come to suspect that the world is not suffering nearly so much from a lack of intelligence in its citizens as it is from a high degree of intelligence wrongly directed.

Students of this intricate subject will be indebted to Doctor Orbison for this collection of cases as well as for his timely comments upon them.

⁂

Paul E. Bowers, M.D. (323 Subway Terminal Building, Los Angeles).—The paper which Doctor Orbison has given us is quite entertaining, but of a decidedly sketchy nature. I personally examined many of the individuals of whom he has written, and I must disagree in several instances with his findings. Particularly is this true in the Hickman case. I found this prisoner to be a sadist, and I reported this case in the *New York Medical Journal* on July 17 and August 7, 1929.

I do agree with Doctor Orbison that many reforms should be accomplished in our manner of dealing with mentally defective persons who are charged with crime. The science of psychiatry has a very definite and helpful contribution to make in the courts regarding tests of responsibility.

Insanity as a legal defense is a pertinent question in the public mind today. Although legal tests for determining the responsibility of the criminal have been developing for centuries past, the results are still unsatisfactory. The learned judge on the bench, the prosecuting and defense attorneys, the jurors—all are nonplused when this little-understood defense is offered. Into this state of confusion the doctor or psychiatrist is called to determine the patient's responsibility or irresponsibility, legally and not medically, in respect to the crime committed. As a result, controversies and differences of opinion arise, the courtroom becomes a Tower of Babel, and the average citizen's respect for the great legal and medical professions begins to wane.

The eagerness of the press to publish the details of every spectacular crime has brought the question of insanity to our attention. Within recent years a striking number of murderers, whether sane or insane, have pleaded insanity as a defense. In fact, the first thought suggested by the newspaper sleuth, hot on the trail of the criminal and a story for the front page, is, "Will the defendant plead insanity?" not, "Is he insane?"

It is unfortunate that there have been so many criminal cases attracting nation-wide interest where the defense of insanity has been a hoax. The cases of Kid McCoy, Harry K. Thaw, Clara Phillips, Hickman, Ruth Judd, Lieutenant Massie, and many others are outstanding examples. The criminal, caught red-handed in a premeditated defenseless murder, grasps at an insanity defense as his only hope. This is often accepted by the normal individual who, shocked by the horrible details of the crime, exclaims: "Only an insane person would commit such a crime!" Jurors, as well as good and honest lawyers, are often fooled by the cleverly assumed rôle of insanity. I would not suggest that any lawyer or any doctor would be so unprofessional as to aid and abet the defendant in his attempt to appear insane. The true malingerer, however, is not difficult to detect. The ninety-year-old test laid down in the McNaughten case, primarily used in our courts today, was voiced according to the light and understanding of the past century. It takes into consideration only the intellectual aspect of the mind in its power to determine between right and wrong, and disregards the processes of will and emotion. Therein lies the weakness. The true test of irresponsibility should be a tri-part test, including the intellectual, volitional and emotional capacities of the mind. Most of our conduct springs from the emotional control; a derangement in this respect should be a most important consideration in the formulation of a legal test.

There should be some means adopted for keeping the law in harmony with advancing ethical and scientific views. This may be done through the appointment by the court of a quasi-official body of men, impartially determined, who are well qualified psychiatrists having a university education and at least five years of experience with the insane. This group should report their findings in written form to the court to be used for reference and subject to cross-examination. Thus ex parte contention and the hypothetical question, which have helped to bring medical testimony into disrepute, will be eliminated. The judge and the jury will be supplied with a clear, intelligent and unbiased report as to the mental condition of the defendant before proceeding to deliberation regarding his legal responsibility. The procedure of the court should be simplified. What is needed in the law is a proper conception of the unified personality.

*

Doctor Orbison (Closing).—In closing I wish to thank those who have discussed this paper and to state that since writing it I have examined three other men who have killed. One was Lieutenant Massie with whom I spent five or more hours, and was able to obtain a mass of evidence regarding his behavior just before and after his killing of the Hawaiian. I am absolutely convinced that he was in a state of delirium followed by a condition typical of ambulatory automatism that lasted for more than one hour acutely and for about twenty-four hours in a less acute state. During the first hour he had to be "slapped" and "pushed about" in order to get him to the "death car." The shooting, in fact, spoiled all the carefully laid-out "plan" that was so much discussed.

My only comment regarding the "psychiatric" testimony put forward by the prosecution demonstrated some of the most reprehensible factors that have cast so much opprobrium on the psychiatrist when he becomes a medico-legal "witness" (two of the visiting alienists never examined the defendant, but testified after reading the transcript).

In my opinion this man was legally insane because he did not know what he was doing at the time—in fact he did just the opposite to what had been planned because the death of the man killed prevented the confession he was just prepared to make.

As to the other two killers to be added to this series, one was insane (medically and legally) and the other showed no symptoms of any kind of "insanity."

ADHERENT SCARS—THEIR TREATMENT[*]

By W. S. Kiskadden, M. D.
Los Angeles

Discussion *by George Warren Pierce, M. D., and Gerald Brown O'Connor, M. D., San Francisco; Hugh Jones, M. D., Los Angeles; Will L. Miles, M. D., Los Angeles.*

In a discussion of the treatment of adherent and cicatricial scars, it is obvious that the old subject of skin grafting in its various phases will predominate. The topic is perennial; but no doubt the activating force lies in the many serious and disabling scars and cicatrices that are constantly presenting themselves.

TYPES OF SCARS

Most of you are familiar with the cicatricial check-rein band of thick scar, often keloidal in type, occurring after burns and infections about the neck and in the cubital, popliteal and axillary fossas. Likewise, it is easy to visualize the thin, shiny or dry scaling scars occurring on any part of the body and resulting from healing by secondary intention. When these scars occur about a joint, they tend to limit or prohibit function and may cause distortion of bone and real joint changes. Blair, Brown, and Hamm[1] emphasize this and point out that, in addition, these scars are most unstable, tending to break down frequently from minor irritations or merely lowering of the general body tone. They have demonstrated that such scars are covered by only a thin layer of epithelium, a few cells in thickness and entirely lacking in elastic tissue. Moreover they lie on a frequently thick and usually avascular scar tissue base, made up of parallel strands of fibrous tissue. This thin epithelium is rendered unstable by its lack of papillae, hair follicles, or glands to aid in attachment to the subcutaneous tissue. This lack of glandular structure accounts for the dryness, scaling, and cracking so frequently present; and because of such constant irritation it is not uncommon to find that such surfaces eventually undergo secondary malignant changes.

Fundamentally such scars are caused by tissue loss. This fact must be constantly kept in mind in planning both the treatment and repair. Such a loss may be due to either burns, infections, or surgical and traumatic debridement. Nor is it always confined only to skin, but subcutaneous tissue, fat, and muscle may also have been sacrificed.

OBJECTS OF TREATMENT

Our treatment, therefore, must be directed, if possible, to the prevention of these scars, and the resultant immobile joints and deformities. At the same time this treatment must not lose sight of the need of a satisfactory cosmetic result.

We are not particularly concerned here with the treatment before scar formation, yet since our end-results are so dependent upon proper consideration of all forces at work, I feel that a brief discussion is indicated. The application of traction before healing has taken place is of occasional value and, if not cumbersome or annoying to the patient, should be tried during the period of preparation for surgery. Of far greater importance is vigorous treatment directed, first, to combating the infection, and secondly, to the stimulation of granulation tissue preparatory for early grafting.

We are all familiar with the use of compresses, irrigation, vaselin gauze, sugar, and other forms of treatment in the stimulation of granulations. Recently I have used 5 per cent alcoholic brilliant green on fresh and chronic granulations with very satisfactory results. A. G. Bettman[2] of Portland tells about the use of a chloretone and scarlet red ointment, which combines an antiseptic, a stimulant, and an analgesic. Doctor Bettman and his colleagues have used it with highly satisfactory results, and I have employed it with satisfaction at the Los Angeles General Hospital. Doctor Blair and his confrères advocate salt baths, alternating with dry heat, for their burn cases. I was glad to read the opinions of Blair, Brown, and Hamm, backed by the experiments of Carrel and others,

---

[*] Read before the Industrial Medicine and Surgical Section of the California Medical Association at the sixty-first annual session, Pasadena, May 2-5, 1932.

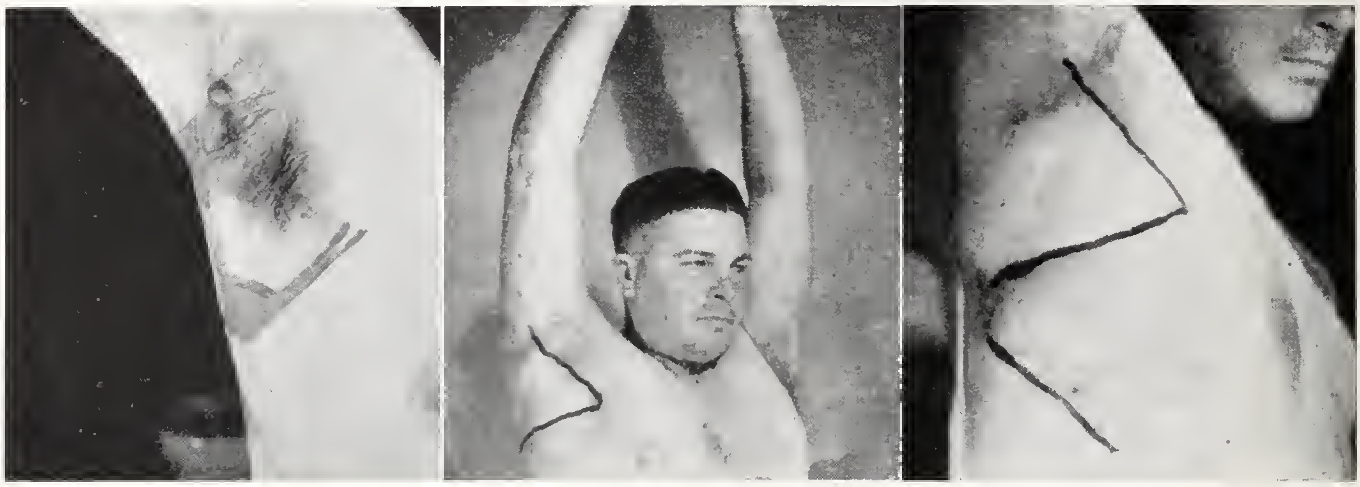


Fig. 1a Fig. 1b Fig. 1c

Fig. 1.—Showing the use of the Z and Reverse Z incision. In Fig. 1a the original Reverse Z plan may be seen. This was abandoned in order to have a minimum amount of scar in the flaps and the Z incision was used, which, with transposition of flaps, shows well in Fig. 1c. Fig. 1a shows limit of elevation of arm. In Fig. 1b is postoperative result. This case was ideal for this procedure because of the relatively small amount of scarring.

that grease dressings did not promote a healthy granulating surface and were detrimental to successful grafting. It is only too often, when confronted with a serious scar, to have the patient say that grafting had been tried but had not been successful. Further inquiry usually establishes the fact that some form of grease therapy had directly preceded the grafting.

THIERSCH OR SPLIT SKIN GRAFTING

It is important that unnecessary delay be avoided and every effort should be expended to quickly prepare the area for grafting. The method of choice where granulations exist is Thiersch or split skin grafting. It may be done quickly and easily, even in the presence of a mild degree of infection, with an expectation of obtaining 75 to 100 per cent take. Pinch grafting is of value, but is more difficult, and healing is greatly delayed. Full thickness grafts, sieve grafts, sliding and pedicle flaps have all been employed on granulating surfaces, but I feel that their use is fraught with danger of failure, and I think that it is far safer to Thiersch graft or use split skin, and plan later to use a flap or full thickness graft as indicated.

The method of Thiersch grafting that has given the best results in my hands is by taking an impression of the area to be grafted with Stent or dental modeling compound and then applying the graft to this.[3] Dr. H. Woolsey[4] takes up this and various other types of grafting in all detail. I feel and I believe that it is the general opinion that Thiersch and split skin grafts are subject to considerable contraction. I have heard Dr. V. P. Blair say that such contraction may be as much as 60 per cent; Davis and Kitlowski prove that such is the case by a series of experiments in measuring the contractility of different types of grafting immediately following cutting them. Their conclusions were that whole thickness grafts had a shrinkage of 43 per cent; half thickness grafts, 24 per cent; and thick Ollier Thiersch grafts, 11 per cent, while true Ollier Thiersch grafts had a shrinkage range of only up to 2 per cent. These interesting experiments bear out our opinion that the elastic fibers in the corium and taken with whole thickness grafts, are necessary to prevent subsequent contraction, all subsequent contraction being dependent upon the thickness of the graft employed, and that because of the lack of contraction following cutting a true Ollier Thiersch graft the greatest shrinkage may be expected to follow its use.

By our traction, splinting, and particularly early grafting, we may have prevented some of the late contractions. However, if not, and the contraction is keloidal in type, then small fractional units of x-ray at weekly intervals may be employed with success. Some x-ray men believe that larger doses and longer time intervals are more suitable and treat keloids in this manner. I have seen both methods employed and believe the smaller dosage gives uniformly better results. This method is applicable, as noted above, only to the thick, keloidal, and flat scars. I do not believe the checkrein type, even when hypertrophied or keloidal, respond sufficiently to x-ray to warrant its use. It must always be kept in mind, however, that

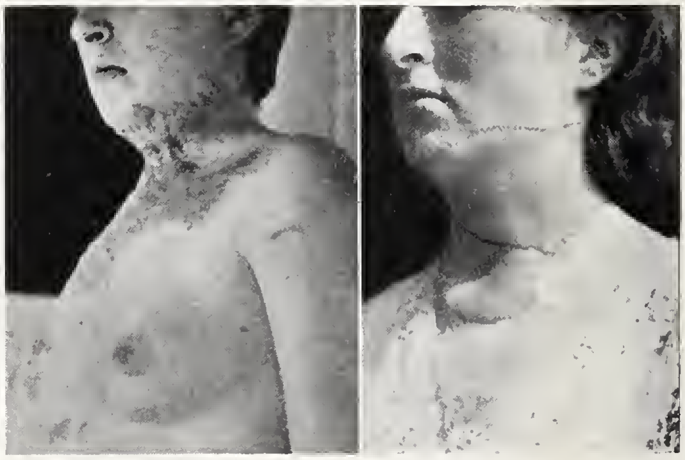


Fig. 2a Fig. 2b

Fig. 2.—Contracting scar secondary to fire burn. The scar pulled on the mouth, ear, and even distorted the eye. A split skin graft was applied and entirely corrected the deformity, but it was felt that the cosmetic result left much to be desired. A tube pedicle from the back was later used, giving the result in Fig. 2b. Function in this case is normal and fortunately the transferred skin is taking on the color of the neighboring skin. This does not always occur.

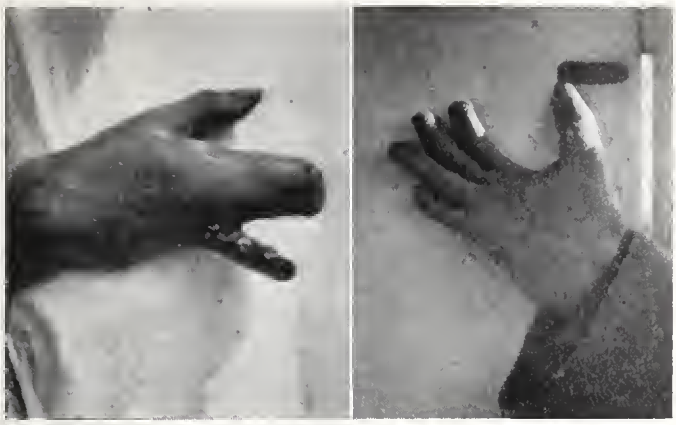


Fig. 3a Fig. 3b

Fig. 3.—Completely syndactylized fingers of one hand in negro girl of 24 years of age. The nails of the first three fingers and the distal phalanges of the first and second finger were connected. In Fig. 3a, the little finger has been separated from the others, and a full thickness graft applied. A split skin was employed for the next procedure and gave such a good result that it was repeated in the operation on the first and second fingers. Function is still partly limited, due to joint changes.

fundamentally there is tissue loss and that nothing short of complete replacement will give normal function.

In the presence of healed but adherent scars or contractions, we have our choice of several procedures. These will be considered in turn.

WHOLE THICKNESS GRAFTS

These should be employed upon a good firm base, such as the palm of the hand, fingers, the forehead, nose, sole of the foot, etc. They should be done only upon a healed, sterile surface, following complete excision of the scar and its base. One should always be prepared to fill in a defect much larger than at first appears to exist. Merely cutting a band of scar and then forcing the joint or tissues back in their normal position will present a truly astonishing need for skin to restore normal function. Application elsewhere, unless firm pressure and immobilization can be applied, is hazardous, and I do not believe that the risk of failure warrants their use, except in carefully selected cases or where other methods are not indicated or possible.

One exception to the above indications for their use is in eyelid surgery. Here Wheeler of New York has brilliantly pioneered the way by successfully applying whole thickness grafts obtained from the opposite lid.

Recently, Padgett[6] of Kansas City and Blair of St. Louis have applied the same to contractures about the neck. It is extremely difficult to maintain constant and equal pressure and immobilization in this area and I would emphasize again that such cases must be carefully selected and the surgeon should be quite guarded in his prognosis.

One often wishes that this plan were open to more universal use since excellent functional and cosmetic results may be obtained; likewise, the time involved (usually three weeks) is much shorter than where flaps or pedicles are employed.

TUNNEL GRAFTS

Whole thickness skin by tunnel graft[7] method, according to the authors[8] may be used under cicatricial contractions and, if properly placed, will break the continuity of the restraining band and correct the contracture. I have used them on the back of rather badly burned fingers with fair success, but believe in these cases a pedicle flap following syndactylizing the fingers, after the method of Bettman,[9] to be the procedure of choice. They are, however, of great value in chronic leg ulcers or abrasions which, because of poor circulation, fail to heal. I have used them here with great success and, curiously, although they are on a scar tissue base, they thrive and take on a very healthy pink color.

In this treatment of ulcers, one should use care to rule out the possible presence of an existing lues even in the presence of a negative Wassermann, anemia, a high blood sugar with a normal urine, or arteriosclerosis. Dr. N. J. Kilbourne[10] has shown in a recently published paper the care necessary in the diagnosis and the treatment of these troublesome cases. His conclusions strikingly illustrate the small place surgery plays in their treatment.

The lack of size and method of application make this type a temporizing plan, which relieves but never entirely corrects the existing deformity. However, if a cicatricial band is anticipated, a tunnel graft may be early employed to lessen the deformity until more radical treatment is possible.

SIEVE GRAFTING

Sieve grafting, wherein a large whole thickness graft is obtained, leaving behind islands of attached skin for future regeneration, is of value in that the donor area need not be grafted. There is contracture present, of course, due to the necessary epithelization of the holes made in the graft when the islands are left. This epithelization may be keloidal in type and, if such should be the case, much of the value of this procedure is lost due to the lack of elasticity. The cosmetic result is not always good, but it does permit the application of large full thickness skin grafts in many regions where recourse to a flap or pedicle would have to be otherwise employed. This method has been used on open wounds following excision of granu-

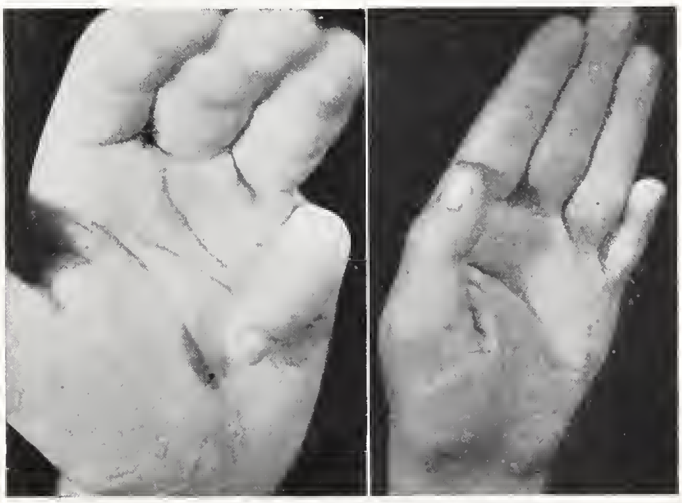


Fig. 4.—A whole thickness graft applied for the correction of a contracted little finger. This case is shown because it clearly demonstrates the lack of growth and development of the little finger during the interval since the injury and its repair, a period of over three years.

lations, but I am dubious about this procedure as a routine treatment.

FLAPS

It often happens that check-rein or contracting bands of scar situated in the axilla, neck, cubital, or popliteal spaces may be corrected by the Z or reversed Z plan, or even by the simpler V to Y procedure. Staige Davis [11] traces the development of this procedure and illustrates its use in many of these troubling conditions. It is his custom to mark out the pattern with the long arm of the Z on the prominent portion of the band or web with the arms so situated so as to avoid, if possible, the adjacent scar tissue. As will be noted in Figure 1, the original Z was later changed to a reverse Z because it was felt that that plan avoided having scar in the flaps. He wisely points out that the tips of the flaps should be blunt rather than pointed, and this is especially true if scar tissue is contained in the flaps. Secondary incisions with the necessary juggling and adjustment of the flaps may be necessary due to the uncertain pull of the unexcised scar which may often tend to upset the original plan.

We have briefly seen that adherent scars, through a fundamental loss of tissue, tend to cause stiff, immobile, and often permanently damaged joints. It is obvious that this condition may likewise involve all of the underlying structures. In those places where a Thiersch or split skin graft will heal a granulating area or correct a contracture, it will of course be employed. Often, however, because of extensive scarring, lack of subcutaneous tissue, and poor blood supply, the surgeon finds that the above fails in whole or in part. The correction necessary is the addition of not only skin but subcutaneous and fat tissue. Here an early Thiersch graft to heal the area and shorten the convalescence, followed by a flap, sliding, or pedicle graft, will often supply the requisite tissue. This is true since usually such a flap or tube pedicle is constructed to carry skin, subcutaneous tissue, fat, and fascia. If it is only desired, however, to use skin and fat, the flap may be carefully trimmed, using caution to preserve the blood vessels supplying the overlying skin. Likewise, if a tube pedicle is formed and it is apparent that sufficient skin will not be available, then a "frying pan" extension may be added to the distal end of the pedicle to increase the amount of skin transported. Later, when the first "frying pan" is in place, a second may be made at the proximal end of the pedicle.

1930 Wilshire Boulevard.

REFERENCES

1. Blair, V. P., Brown, J. B., and Hamm, W. G.: The Early Treatment of Burns and Repair of Their Defects, J. A. M. A., Vol. 96, No. 16, p. 1355 (April 16), 1932.

2. Bettman, A. G.: A Simpler Technique for Promoting Epithelization and Protecting Skin Grafts, J. A. M. A., 97:1879-81 (Dec. 19), 1931.

3. Kiskadden, W. S.: Newer Methods of Thiersch Grafting, Western Journal of Surg., Gynec., and Obst. (Oct.), 1931.

4. Woolsey, J. H.: Free Skin Grafts of Less Than Full Thickness—Cause for Their Failure and Success, California and West. Med., Vol. 36, No. 5, p. 334 (May), 1932.

5. Davis, J. E., and Kitlowski, E. A.: Immediate Contraction of Cutaneous Cuts and Cause, Arch. Surg., 23:954 (Dec.), 1931.

6. Padgett, E. C.: The Full Thickness Skin Graft in Correction of Soft Tissue Deformities, J. A. M. A., 95:18 (Jan. 2), 1932.

7. Parce, A. D., Major, Medical Corps, U. S. A.: Ann. of Surg., p. 658 (June), 1922.

8. Keeler, W. L.: Ten Years of Tunnel Skin Grafting, Ann. Surg., 91:924 (June), 1930.

9. Bettman, A. G.: Syndactylizing the Fingers Preliminary to Skin Grafting, Northwest Med., Vol. 31, No. 2, p. 70 (Feb.), 1932.

10. Kilbourne, N. J.: Leg Ulcers of Unrecognized Etiology, J. A. M. A., Vol. 98, No. 23, p. 1955 (June 4), 1932.

11. Davis, J. Staige: The Relaxation of Scar Contractures by Means of the Z or Reversed Z Incision, Ann. Surg., 94:871, (Nov.), 1931.

DISCUSSION

George Warren Pierce, M. D., and Gerald Brown O'Connor, M. D., (490 Post Street, San Francisco).—Doctor Kiskadden's interesting paper has given us a comprehensive review of the major factors of the problem of adherent and cicatricial scars. One of the common errors in planning a repair for such scars is the underestimation of the amount of tissue destruction. Excision of apparently small scars often reveals a startling defect and for this reason it is well to have more than one plan in readiness for the reconstruction. Indeed the surgeon must be ready to select any one of the numerous procedures described in this paper, the success of the operation depending on the sufficiency of his judgment.

In regard to skin grafts, we still see patients occasionally where isografts have been tried from various donors. This is a useless and wasteful procedure, as the grafts do not take permanently and some of the patients show a marked secondary anemia from the repeated foreign protein reactions which often accompany such grafts.

Radium or roentgen-ray therapy for adherent scars have not proved satisfactory to us because adherent scars are the result of destruction not only of the skin but also of the fascia and deeper structures. Such scars demand a restitution of parts for restoration of function and contour, and the mere softening of the superficial layers of the scar is not sufficient. Also, unless the therapy is carefully controlled, telangectases and hyperkeratoses result; the latter of which may go on to epitheliomata. For this reason large scars should be replaced by skin flaps, smaller ones perhaps by skin grafts and linear scars treated by simple excision. We do favor the use of radium on all scars of the face ten days after operation as a prophylactic against keloid formation or hypertrophic scar.

In using transposed flaps we find that thinner flaps do better than those bearing too much fat. There is a plexus of blood vessels lying just beneath the skin and if the fat is trimmed very carefully to this layer the blood supply will be preserved.

Treatment of adherent scars is a large subject, and success in treatment is dependent on careful attention to a great number of small details of technique.

⁂

Hugh Jones, M. D. (201 Medical Office Building, Los Angeles).—My interest in the author's paper is from the standpoint of an orthopedic surgeon. Too often orthopedists are confronted with the late extreme deformities that might have been prevented by adequate and proper early care. I wish to emphasize Doctor Kiskadden's points relating to traction and splinting to prevent deformity, and especially the means taken for the early preparation of the surface for grafting. After rather extreme deformities have come about we at times find it necessary to lengthen tendons as well as to relieve skin contractures in order to correct deformities.

Doctor Kiskadden's mention of the full thickness graft for use when subsequent contraction is to be avoided as much as possible, prompts me to tell of an experience with a large full thickness graft which I employed in the popliteal space. A wax model for record was made a few weeks after the grafting operation, and several years later the patient was again seen. At this time another model was made and we were surprised to find that the second model showed that the full thickness skin graft had enlarged about 20 per cent. The graft was crossed by numerous striae atrophica with an appearance very similar to the striae gravidarum. Quite evidently the full thickness graft had been stretched by the retraction of surrounding scar.

The subject-matter brought out in a paper on skin grafting is ever new, because each case requiring plastic relief of a scar deformity is usually a problem in itself and must be so attacked. The subject cannot be dismissed by generalizations.

⁂

Will L. Miles, M. D. (822 Pacific Mutual Building, Los Angeles).—The author's recommendation of early split skin grafting preparatory to some other type of later repair is, I believe, an excellent one. This type of graft may be employed with all expectancy of a successful take during the early stages of healing when any other type of repair might be either impossible or inadvisable due to the presence of a low-grade infection. Too often we are inclined to postpone all repair until we are certain that an absolutely clean granulating base entirely free from infection is present, only to find that serious contracture has resulted, making the repair more difficult and prolonging convalescence. Thiersch split skin grafts, when properly applied, will survive and give a remarkably high percentage of takes even when planted on a very poor or mildly septic soil. An exception to this is the occasional case of low-grade infection, which is marked by the presence of *Bacillus pyocyaneus*. My experience has been that when this organism is present it is useless to attempt any type of graft as failure will invariably result; the graft melting away completely in a flood of green pus.

INFECTIONS OF THE GENITO-URINARY TRACT*

By Miley B. Wesson, M. D.
San Francisco

Discussion *by Thomas W. Bath, M. D., Reno, Nevada; Burnett Wright, M. D., Los Angeles; Lloyd Kindall, M. D., Oakland.*

PRACTICALLY every member of this society is interested in the treatment of diseases of the genito-urinary tract, and rarely a day passes but what the post brings to him a circular letter extolling the merits of some drug that will "cure" all such infections. It has long been an axiom of therapeutics that any disease with numerous sure cures is frequently impossible to cure, and urologists subscribe whole-heartedly to this dogma.

Genito-urinary lesions manifest themselves from the cradle to the grave. The pediatrician has to deal with pyelitis and bed wetting, and the general practitioner is annoyed with the "strains" of wild youths and the "honeymoon appendicitis" of the female adolescent, to say nothing of the women who have "colds in the bladder" or "weak kidneys." And, of course, we are all familiar with the old man who has spent the first part of his life making money and the latter part trying to make water. The world's greatest surgeons, including Sir John Hunter and Dr. William S. Halsted, have been intensely interested in this field, and it is for this reason that it has reached its present stage of scientific precision.

DIFFICULTIES MET WITH IN PRACTICE

With the advances in the refinements of bacteriology and laboratory technique, we poor practitioners of medicine are enmeshed in a mass of exceptions to the generally accepted rules. Theoretically, urine smears and cultures should always agree, but in a study of three thousand routine cultures from the urological clinic at Johns Hopkins Hospital, it was found that smears and cultures agreed in only 64 per cent of the cases. Gram-negative bacilli of the proteus and colon group with staphylococci present no difficulties to the bacteriologist. When in such numbers as to show in smears, they are easily cultivated in carbohydrate broth and agar; streptococci need an enriching medium of blood and serum agar and must be transferred to such when seen in smears. As was expected, many organisms were found in the cultures that did not show in the smears, due to their scarcity; however, in practically 6 per cent of the cases organisms were seen in the smears and the cultures were negative.

A number of explanations are possible: (1) The organisms were dead from the action of antiseptics; (2) artefacts and not organisms were seen; (3) organisms seen in epithelial cells are usually nonviable; (4) a special medium was needed; or (5) the cultures were not properly protected from light, cold, and air. A Gram-negative, nonsporulating bacillus was found that was so sensitive in its oxygen requirements that it was killed by exposure to the air in from forty to one hour and fifteen minutes.

In a series of 600 bladder infections they found that 351 were infected with colon-group organisms, and of these 253 were found in pure culture. The staphylococci were found in 265 cases and 122 were in pure cultures, while there were 67 cases of streptococci, 30 of which were obtained in pure cultures. A parallel study of kidney infections showed a lower incidence of colon bacilli, but a much greater increase in staphylococci and proteus, B. pyocyaneus and organisms of the paratyphoid group. In 203 patients with blood stream infections, there were 104 cases of the colon group, 27 staphylococcus, 18 proteus, etc. The mortality for the proteus group was 55 per cent. This is rather surprising to those of us who were taught in the bacteriology laboratory to look with contempt upon this organism.

The difficulty of completely eradicating infections of the genito-urinary tract is due to the fact that the bacteria have usually penetrated so deeply that local treatment, whether of the urethra, bladder or the kidney pelvis, usually fails to reach the depths of the infection. In the use of antiseptics we must always remember to keep the dilution as low as possible so as to do no tissue damage. Oral medication, as a whole, has been a failure. Intravenous chemotherapy, protein and

---

* Read at the twenty-ninth annual meeting of the Nevada State Medical Association, Reno, Nevada, September 23-24, 1932.

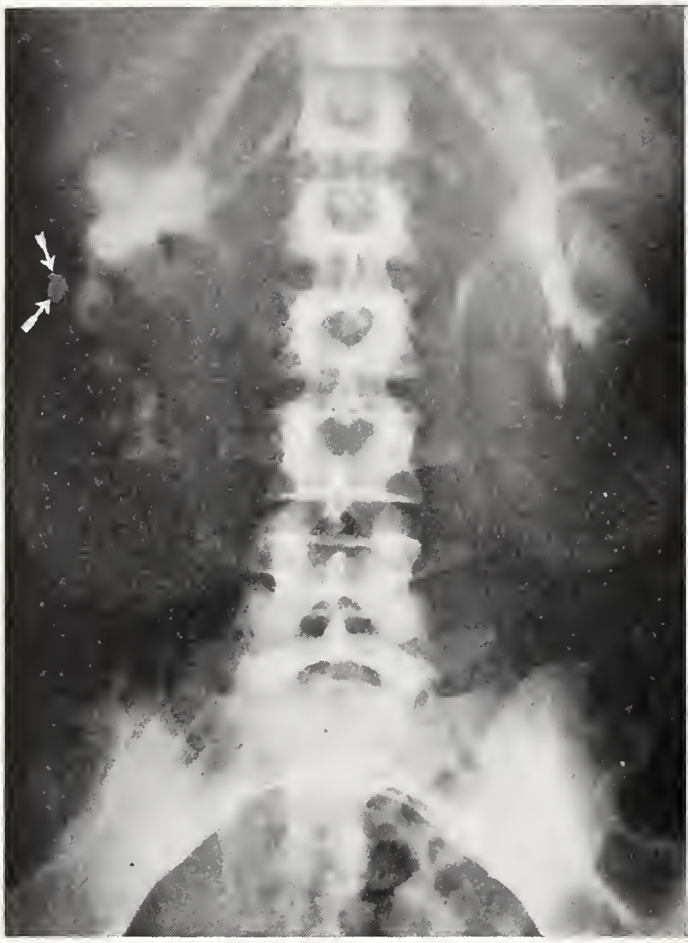


Fig. 1.—May 24, 1932. Intravenous neo-iopax (fifteen minutes) with catheters plugged. Bilateral polycystic kidneys; stone in middle calyx of right kidney; no evidence of dilatation or destruction of calyces of left kidney.

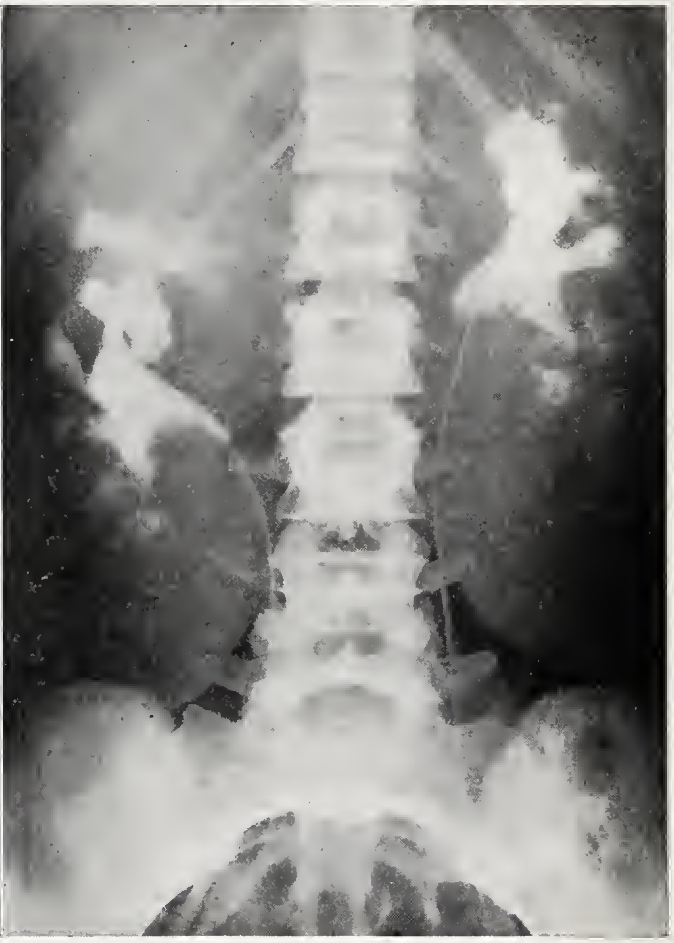


Fig. 2.—July 19, 1932. Retrograde pyelograms (13½ per cent sodium iodid by gravity). Note increase in size and amount of destruction of both kidneys.

serum therapy, both specific and nonspecific, and shock therapy have been of some help.

GONORRHEA

Many cases are cured spontaneously. Twenty years ago patients were advised to spend ten days in bed on a bland diet and drinking only alkaline water, while over two thousand years ago the infected ones were ordered to sit in the bed of a river below the town, facing upstream. However, organisms that invade deep crypts and distant organs may remain dormant for years; how many, we do not know. Henry G. Bugbee of New York City told me that he had a patient who, he was sure, had carried the same infection twenty-six years, while Edward L. Keyes says that after about two years it is up to the man to prove that he has not a reinfection. I have a patient who still has his gonorrhea of ten years ago, but it has probably been reactivated by transferring it back and forth to his wife many times. She has had two children during this time and the gynecologists were never able to determine the cause of her profuse leucorrhoea. He had a periurethral duct along the dorsum of the urethra, which I destroyed with a cautery, thereby destroying the "hibernating" den.

I have cured twenty-one patients of acute gonorrhea with one treatment by using a bladder irrigation (gravity) of 1-2000 acriflavine (Boots) (1-1000 acriflavine causes soft strictures, which are easily destroyed by a single passage of a sound.)

Montague L. Boyd of Atlanta, Georgia, injects a similar preparation into the urethra of a recumbent patient, wraps the phallus in pads of cotton, and has him remain in that position until he has to void.

Edgar G. Ballenger of Atlanta, Georgia, injects 5 per cent argyrol into the urethra and seals the meatus with collodion for six or eight hours. He lays great stress on the necessity of using white collodion, as the yellow will not hold.

Injections of zinc sulphate and lead acetate mixtures, five per cent argyrol, or one-half per cent protargol, are commonly dispensed by the druggists, while physicians prescribe reargon or one-half per cent lunosol (colorless). There is probably little difference in the action of the various silver salts, but no patient is going to pay a doctor for a prescription, and like it, which he can get free from the dispensing pharmacist. Potassium permanganate has been popular since the days of Valentine. It is not antiseptic in a concentration less than 1-2000, whereas the tissues will not tolerate more than 1-4000. Consequently the irrigations have no antiseptic properties, but are very valuable as an astringent and to clean up pus, while the injections are, of course, valueless as gonococcocides.

Sandalwood oil, oil of copaiba, santal midys, etc., have no antiseptic value, but tend to prevent strangury. They make the urine bland, but generally upset the stomach. A tincture of hyoscyamus and potassium citrate mixture will accomplish the same result and not unduly disturb the digestive tract.

Hugh H. Young uses a combination of local treatment and intravenous therapy in all cases of gonorrhea, even when the infection is only a few hours old. Intravenous therapy has no effect on organisms in the urethra, the lumen of which is not reached by the blood stream. The vaccines have no specific value, but act merely as a form of protein therapy, and typhoid vaccine is more widely used than is the gonococcus vaccine. For intravenous therapy he advocates 13 to 20 cubic centimeters of one per cent mercurochrome, or small doses of neosalvarsan, and reports that fifty-five per cent of his cases of acute and chronic gonorrhea are sterilized after one or more intravenous injections.

In his gonorrheal arthritis series of twenty-four cases, there was quick amelioration of the joint condition in all cases and the complete cure of the gonorrhea and its complications in fifteen cases.

INFECTIONS OF URINARY TRACT DUE TO BACTERIA OTHER THAN GONOCOCCUS OR TUBERCLE BACILLUS

All other infections in the urethra, bladder and pelvis of kidney, acute in character, are easily disposed of by simple antiseptic irrigations or injections, provided all obstructions to free drainage are removed. Many such infections are self-limiting, or autosterilizing. This is not true when infection is in the prostate, seminal vesicles and renal cortex, or medulla. Internal urinary antiseptics such as methenamine or niazo may be helpful. (I have obtained no results from pyridium, serenium, acriflavine, or caprocol.) Occasionally, salting out colon bacilli, *i. e.,* alternating the reaction of the urine between acid and alkali, is of value, provided the hydrogen ion concentration, when acid, ranges from 4.6 to 5, and when alkaline varies from 9.2 to 9.6. At these levels there is an inhibition of colon bacilli growth whose maximum development takes place at p_H 6 to 7. At the Mayo Clinic they accomplish this by means of the ketogenic diet, for with its increase in fats and decrease in carbohydrates the hydrogen ion concentration theoretically quickly drops below 5, and a state of ketosis ensues. I have two obstinate cases of pyelitis, or pyelonephritis, in the hospital on this diet at the present time. One patient has been taking it six weeks and the other three weeks, and the colon bacilli seem to enjoy the diet, but the subjects are objecting. H. C. Bumpus, Jr., in a personal communication, says that they do not hospitalize their patients, and that they keep them on the diet only one week.

Intravenous and chemotherapy are of value in some of these cases. Neosalvarsan is considered by many to be almost a specific for a coccus infection, while 10 to 20 cubic centimeters of one per cent mercurochrome sometimes act the same way with a bacillary infection; acriflavine has given good results in the hands of some, and preparations of hexamethylenamine are popular. Salihexin (A. D. R.) is widely used, and two years ago the Mayo Clinic was interested in the use of cylotropin (Schering), which consisted of hexamethylene-tetramin grains xxx, sodium salicylate grains xii, and caffein sodium salicylate grains iii, in aqueous solution.

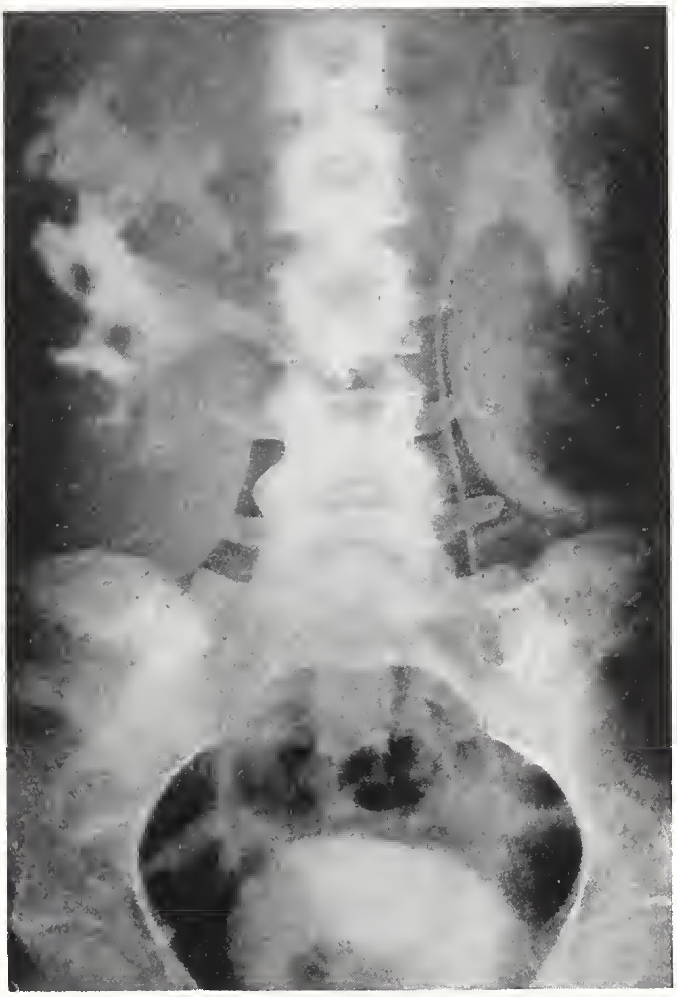


Fig. 3.—Combination pyelograms made by injecting neoskiodan intravenously and 13½ per cent sodium iodid by gravity through the catheters.

Bacteriophage is theoretically a perfect cure-all, as it acts in three ways: (1) specific, (2) vaccine effect, and (3) nonspecific, or foreign protein action. It is a transmissible bacterial lysin which regenerates at the expense of the living growing bacteria, which it dissolves; or, stated another way, it is a parasitic virus, a definite entity, that grows only in the presence of a particular strain of germs, which it destroys by dissolving. The commercial "phage" is of questionable value because of the large number of strains of bacteria and the improbability of the proper parasitic virus for your particular germ being present in the proprietary package. Dr. E. W. Schultz, professor of bacteriology at Stanford University, prepares the material used in San Francisco, and he told me yesterday that he would do it for you, provided you send him pure cultures of the organisms by air mail. But you must send him reports of your results each time; otherwise you get no more "phage," for he wants to determine the clinical value of bacteriophage. (Incidentally, the cost is ten cents per cubic centimeter.)

I have not had any startling cures, but I continue to use bacteriophage on every obstinate case of pyelitis, and probably the reason why I do not

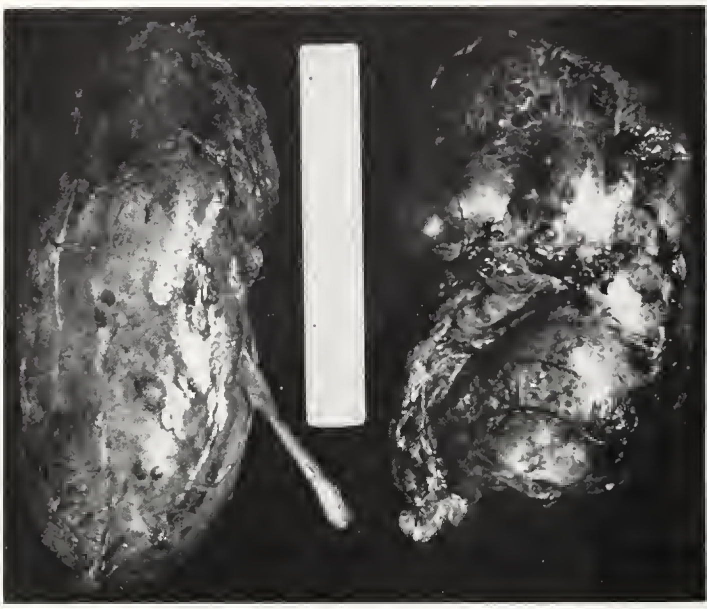


Fig. 4.—Kidneys at autopsy. Left kidney weighed 1,025 grams and measured 22 x 9 x 10 centimeters, while right kidney weighed 950 grams and measured 18 x 9 x 11 centimeters.

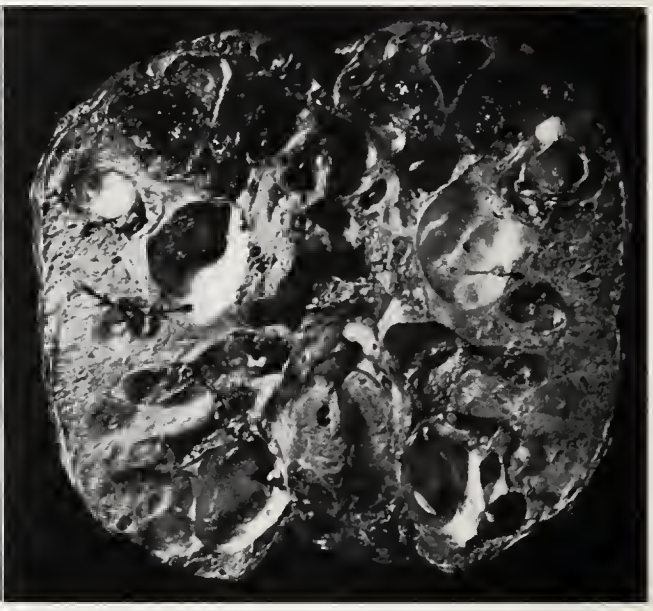


Fig. 5.—Right kidney. The stone lies in the tip of the middle calyx. The nephrotomy drainage incision entered the pelves through a large cyst in the middle. The myriads of cysts of both kidneys were essentially alike.

get the "cures" reported by others is, that I always wash out my patients a few times with one per cent silver nitrate, 1-10,000 merthiolate, or one per cent mercurochrome, and the drugs or the mechanical passing of the catheters cures all of my easy cases, so I do not use bacteriophage on them.

My technique for bacteriophage is to inject about 10 cubic centimeters in each kidney pelvis and about 40 cubic centimeters in the empty bladder and keep the patient quiet in bed for forty-eight hours with the foot elevated ten inches. If the patient is very sick I leave in the ureteral catheters and inject 5 cubic centimeters of "phage" every four hours for ten doses. Every second day I give 1 cubic centimeter intradermally or subcutaneously, for the immunizing action. The intravenous injections of 0.1 cubic centimeter in 10 cubic centimeters saline I stopped, because temperatures of 106 degrees annoy me. The reactions were thought to be due to the proteose media carried over, and Doctor Schultz is trying a new media. If he can make a preparation so that 50 cubic centimeters of "phage" can be safely injected into the vein, then the blood can carry the parasitic virus to every part of the kidney and we will get results. In one patient I instilled 200 cubic centimeters of "phage" in the rectum and the blood that was collected one hour later, when diluted one hundred times, induced lysis in cultures, but probably not in an effective concentration, therapeutically speaking.

I want to report in detail one case of so-called pyelitis—really pyelonephritis and pyonephrosis—that demonstrates how little we know about treating such an infection.

REPORT OF CASE

F. G., female, twenty-nine, married. This patient was apparently in perfect health when she consulted an eminent gynecologist to see why she had not been pregnant although married for four years. On March 1, 1932, she had an appendectomy and hysterectomy. She entered the hospital with an uninfected urine, and four days later her urine was filled with pus. During the interim she was catheterized four times. At the end of ten days she was discharged from the hospital, but her surgeon continued to treat her bladder with argyrol injections twice a week and gave her urotropin by mouth.

I first saw her on May 21, 1932. She complained of pains in the right side, occasional twinges in the left, had a normal temperature in the morning, and an afternoon elevation of 101 degrees. The surgeon said that at the time of the operation her kidneys were normal in size and there had been very little enlargement up to the time I saw her.

On May 22 I cystoscoped her. Both kidneys were enlarged and infected, and there was a normal function on the left and a reduced one on the right. There was a small stone in the right middle calyx and considerable destruction of the upper calyx (Fig. 1). Niazo tablets by mouth were prescribed. The cystoscopy stirred up her infection, and her afternoon temperatures were about 104 degrees. Four days later retention "gold catheters" were put in her kidneys, and these were irrigated every two to four hours with various dilute antiseptics—1 per cent mercurochrome, 1-10,000 merthiolate, 1 per cent silver nitrate and boric acid. On May 27 I injected, intravenously, .6 gram neosalvarsan and the next day her temperature rose to 105 degrees. On May 30 I injected, intravenously, 10 cubic centimeters of 1 per cent mercurochrome with no reaction, and two days later the maximum temperature was 98.6 degrees. On June 2 her temperature was 101.6 degrees, and so I gave 15 cubic centimeters of 1 per cent mercurochrome and one hour later she had projectile vomiting, but the temperature went down so that three days later the maximum elevation was 0.3 degrees.

It looked as if I was about through, so on June 10 I started bacteriophage to finish the case. All other medication was stopped, daily the kidneys were lavaged with the "phage," and she was given immunizing doses subcutaneously. On the third day her temperature was 105 degrees. Bacteriophage (one-tenth cubic centimeter in one cubic centimeter salt solution) was injected intravenously and she had a proteose reaction, with evidences of circulatory failure, which was controlled by hypodermic injections of adrenalin. Two days later her temperature was normal.

The temperature remained practically normal, but the patient became more anemic and the kidneys increased (Fig. 2) in size until they extended from the diaphragm to below the brim of the pelvis, in spite of

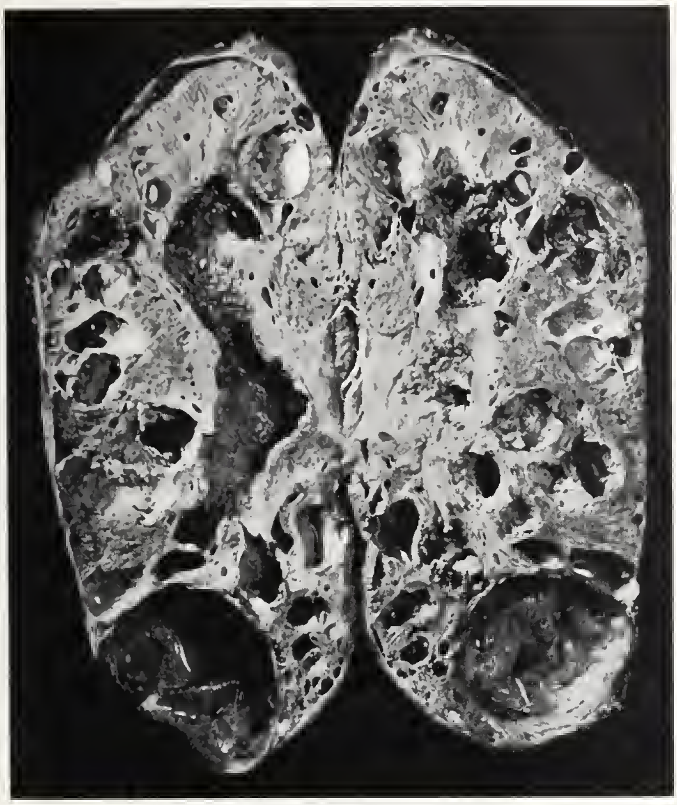


Fig. 6.—Left kidney. Note the large cyst, 7 centimeters in diameter at lower pole, and numerous other cysts scattered throughout both cortex and medulla of sizes varying from 2 to 5 centimeters. Some were filled with clear jelly-like material, while the contents of others were white and opaque.

the daily lavages with bacteriophage. Intravenous neoskiodan gave very poor pictures, even though films were made up to one hour and fifteen minutes, demonstrating that there was very little function.

In July 11 the temperature rose to 103.5 degrees so I tried 12 cubic centimeters of one per cent mercurochrome intravenously, and there was no reaction. On July 14 the temperature was normal, the red blood count was 4,500,000, and the hemoglobin 40 per cent. Shortly thereafter a foul slough began to pass from the bladder. She was transfused six times within the next month, and when she was not able to take 3,000 cubic centimeters of water per day by mouth, it was given subcutaneously. Blood cultures were normal throughout and urine cultures showed colon at all times, and at one time there was streptococcus.

On July 26 a projecting hard lump appeared on the right side which extended across to the umbilicus. The interns and nurses maintained that this decreased in size with colon irrigations. A picture showed increased destruction of the upper calyx (Fig. 3). Since perinephritic abscess was still a possibility in the minds of some of the consultants, it was decided to expose the kidney and do a nephrotomy, leaving in a large rubber tube. A characteristic polycystic kidney was found with many purulent cysts that were punctured.

Five days later her nonprotein nitrogen was 74 milligrams and the creatinin 2 milligrams. After forty-eight hours of coma, she expired August 9, 1932, and the kidneys were removed through the operative incision. The right weighed 925 grams and the left, 1,050 grams (Figs. 4, 5, and 6).

COMMENT

Considering the fact that the surgeon reported her kidneys normal in size at the time of operation five months before, and my various pictures showed that they gradually increased in size, there was a possibility that they were due to cystic dilatation from inflammatory reaction and were not true congenital polycystic kidneys. Microscopic sections showed that all cysts, irrespective of size, were lined with a single layer of epithelial cells, and every transition in cyst size and in degrees of epithelial flattening could be found. Hence, the origin of the cysts from nondischarging, dilating tubules was obvious.

The theory of congenital origin assumes a developmental failure in fusion of the renal and pelvic portions of the kidney units or the production of an excess number of the renal elements. Such cases develop in the first year of life, and in many instances are associated with accompanying cysts of the liver or pancreas or with other developmental defects and anomalies. My patient showed no congenital anomalies or other cysts. Also, cases in which cyst formation represents the outstanding kidney pathology, and with little or no associated infective or inflammatory change, belong in this group.

The other theory, and the logical one in this case, is that the blocking of the tubules and consequent cystic dilatation is secondary to the intense inflammatory reaction, edema, and plugging of the larger tubules by the pus cells. Following her pelvic operation, there was undoubtedly an acute flare-up of this preëxistent kidney infection, with resultant inflammatory plugging and compression blocking of the tubules, and eventually the formation of dilated tubule cysts and consequent enlargement of the kidneys.

Every form of therapy was tried except reducing the hydrogen ion concentration by means of a ketogenic diet, and this is not a practical diet for a very sick patient. We have no specific therapy for pyelonephritis or other severe genito-urinary infections.

490 Post Street.

DISCUSSION

Thomas W. Bath, M. D. (Reno, Nevada).—It is certainly refreshing to hear Doctor Wesson say in the concluding sentence of his first paragraph that "any disease with numerous sure cures is frequently impossible to cure." The general practitioner follows in the line of the specialist with reference to the advertised remedies that are blazoned before the medical public extolling their curative virtues, especially in specific diseases of the genito-urinary tract; and the physician who follows up his cases, and after having tried to cure with them, feels disgusted. For in spite of his most ardent endeavors the patient, shortly after his discharge as cured, frequently returns to his physician with the same old complaint.

We might well endorse the statement of Ricord, who in 1838 published his results after he had inoculated more than twenty-five hundred human beings to determine the difference between syphilis and gonorrhea. The dictum promulgated by Ricord, that "Man knew when it (gonorrhea) begun, but God only knew when it ended," is a scientific observation made a century ago with which the modern urologist and general practitioner will heartily concur.

Many physicians, in examining either men or women, if they fail at first in finding the specific coccus, dismiss the patient with a single examination and oftentimes with a certificate certifying "That upon careful examination they have failed to find that Mr. or Madam X was afflicted with the gonorrhea." Certainly a foolish statement! After they have had years of experience endeavoring to chase the festive gonococcus from its hidden recesses in the racemose glands of the urethra or the cervix or other places capable of hiding away the illusive germ, they will eventually learn that clinical symptoms of discharge of white and glairy mucus from either man or woman should arouse suspicion that the individual, until further proved to the contrary, is suffering from gonorrhea.

Cross infection between man and woman will result in disaster more often to the woman unless extreme radical measures are taken. A large per cent of the operative cases on women of the child-bearing age are a direct result of venereal infections. Swollen ovaries, pus tubes, inflamed cervices, inflamed Skeen's glands, inflamed Naboth's glands, intermenstrual bleeding, ectopic pregnancies—all are characteristic of the old and still very applicable term, "pelvic cellulitis." Such is the picture that the clinician sees, and a radical operation done on the woman for cure frequently results in sterilization. The willingness of the modern male to offer up the woman on the sacrificial altar of science is exactly in keeping with the ancients, who used woman as a sacrifice to their deity. When all the sources of infections are destroyed, there is a possibility that the woman will regain her health, but at the expense of her fecundity. The woman pays. The man possibly will survive.

Until some really curative medication is found I think Doctor Wesson's allusion to the ancients who sat in the warm waters of the stream seeking purification is about as good a treatment as any. However, we will continue to try, trusting to find the sesame which will be the fruition of our hope and endeavor.

⁂

Burnett Wright, M. D. (727 West Seventh Street, Los Angeles).—Doctor Wesson's paper has touched on many phases of the broad subject of urinary tract infections. He frankly admits the disappointment that is common to all who are seeking for the drug or the method that will be universally successful in sterilizing an infected urinary tract.

It is unlikely that any agent will be found that can be taken by mouth and excreted in the urine in such concentration as to cause complete sterilization when definite obstruction to free drainage is present. If stagnation of urine and remote foci of infection could be excluded, the treatment of nongonorrheal and nontuberculous urinary tract infections would require little consideration. We believe urinary obstruction to be the most important single factor in the production and maintenance of urinary infections of the type under discussion. Often it is no more than a narrowing of the lumen of the urethra or ureter (too small at best) by a transient edema that responds readily to dilatation and irrigations or subsides spontaneously and a cure is effected. Many such cases are unrecognized and are self-limited or autosterilizing, as Doctor Wesson says. When a definite and lasting obstruction is present, its recognition and removal by appropriate means is of first importance. When this has been accomplished, a careful search for remote foci of infection should be made and every effort put forth to eradicate them. By cleaning out these nests of bacteria the treatment directed toward sterilizing the urinary tract benefits (*a*) by a reduction in the number of organisms carried to the kidneys in the blood stream; (*b*) from a raising of the natural immunity by reducing the volume of infection; and (*c*) in a general improvement in health.

Obstructions in the upper urinary tract, especially when unilateral, may exist for a long time without symptoms, until infection occurs. Many are now being found by intravenous urography, and a great deal can be done in the way of preventing future urinary tract infections if they are corrected. This applies especially to children.

⁂

Lloyd Kindall, M. D. (400 Twenty-ninth Street, Oakland).—Doctor Wesson's case report illustrates the type of infection we get occasionally that is discouraging because the various recognized methods of treatment fail.

The patient's bladder was infected with colon bacillus when a catheter was passed into the bladder. This was followed by daily elevations of temperature. Upon urologic investigation two and a half months later, both kidneys were found to be enlarged, a calculus in the right middle calyx, and destruction of the right upper calyx. What a marked pathologic change in so short a period of time! And remember, these changes progressed without trauma from ureteral catheters or pressure from sodium iodid solution. The kidneys continued to enlarge, several standard treatments were given, and the patient died five months after the beginning of the infection, the kidney being greatly enlarged from infection and cysts.

I feel that this patient would have died irrespective of any treatment given. Our first principle in the treatment of pyelonephritis is correcting stasis any place along the urinary tract. This patient had stasis in the kidney parenchyma because of the rapid increase in the size of the cysts; possibly the parenchymal infection stimulated the cysts to activity.

Doctor Wesson states that we have no specific treatment for pyelonephritis, which is true. Many patients get well by correcting stasis, forcing fluids, rest, and changing the reaction of the urine. The more persistent cases are frequently improved or cured by pelvis lavage and intravenous medication. Bacteriophage therapy helps to cure many of these infections. Stock "phages" sold by commercial houses remind me of the old "gunshot" prescription, hoping that one of the ingredients will cure the disease. Bacteriophage should be made from the patient's own culture and should not contain antiseptic preservatives of such strength as will interfere with the effectiveness of the product. From statistics collected by Dr. E. W. Schultz of Stanford University in the treatment of pyelonephritis by phage therapy there were 87 per cent cures in the acute cases, while in the chronic cases there were 28 per cent cures and 50 per cent of cases improved. These figures give us encouragement in the future possibilities of phage. To make the autolysed phage effective it must come in contact with the organisms, hence the large percentage of cures in the acute cases. In the chronic cases, phage injected into the pelvis does not come in contact with the organisms that have penetrated deeply into the tissues of the pelvis and parenchyma, but phage injection subcutaneously helps to develop immunity by the dissolved bacterial proteins. Intravenous phage therapy would be ideal if it could be given in large or concentrated doses without reaction. This reaction, even in small doses, is sometimes severe, but we must remember that some patients are sensitive to most any type of intravenous therapy. The phage itself is harmless, but the associated proteins and salts may on occasion give reaction. Work is being done at the present time in purifying phage solutions for intravenous therapy. Doctor Schultz told me that, to date, investigators in the field of bacteriophage had barely scratched the surface and it is hoped that funds will be available for these scientists to continue their investigations.

⁂

Doctor Wesson (Closing).—There is no specific therapy for pyogenic infections of the genito-urinary tract. In the treatment of these diseases the physician must keep constantly in mind the axiom that a good doctor is one who does his patients no harm. Furthermore, if there is a "quick cure" we must not neglect to give part of the credit to Madam Nature and part to the patient's ancestors, who endowed him with a resistant constitution.

For control of the severe infections, our hope lies in the development of bacteriophage therapy. This will require a combination of a scientific bacteriologist with vision (like Doctor Schultz) and a skeptical clinician with a large charity service of genito-urinary infections; and so far no study by such a team has been made. The average bacteriophage statistics are no more dependable than are those concerning the various dyes given by mouth that apparently "cure" everybody's patients but mine.

THE LURE OF MEDICAL HISTORY*

JOHANN SIGISMUND ELSHOLTZ (1623–1688)†

CLYSMATICA NOVA (1665): ELSHOLTZ' NEGLECTED WORK ON INTRAVENOUS INJECTION

By Ethel Gladstone
San Francisco

III‡

CHAPTER V. *Observations by the Italians.*—Up till this time we have discussed the results our own research has afforded. There now follows what other people in other countries have discovered in their investigations.

In this work, which started not long ago, let us commence with the Italians, first at Bologna, then the tetrad of anatomical letters of Paris, the latter two of which were written by Carolus Fracassatus, an anatomist of Pisa. In them he recounts four experiments he made to establish the new art; these are retold in the *Journal de Sçavans,* or Scholars' Journal, published at Paris, for the month of August of the past year.

First Fracassatus tells how, after he had injected some common *aqua fortis,* a little weakened, into the jugular and also the crural vein of an animal, it died instantly. On dissecting the carcass, he observed that the blood was all coagulated, but more in the vessels than about the intestines. He noticed also that the larger vessels were split, just as, in those who die of apoplexy, the vessels of the lungs are generally found to be ruptured. Certainly we must conclude from this that whenever apoplexy is caused by coagulation of blood it can be cured by a suitable injection of a drug which produces dissolution.

Then he injected *spiritus vitrioli* in another animal, and this caused a slower death than the preceding liquid. The animal moaned all day, and foamed at the mouth as epileptics do, breathing quickly and heaving his chest. Nevertheless, when he died it was seen that the blood stream had congealed in his veins, but it was separated in little heaps, like soot in a furnace.

Next he injected *spiritus sulphuris* in the veins of a dog with a syringe; but even after several injections, the animal did not die. Therefore, after the wound was bandaged, he was set free in order to see what he would do. He immediately ran about, examined all the corners of the room, and, finding some bones, began to gnaw at them very greedily, as if the liquid had aroused his appetite.

Oleum tartari was injected in another dog. After repeated moaning he swelled up all over and died. When a dissection was made, it was discovered with amazement that his blood was not at all congealed, but on the contrary was more fluid and redder than usual. So it was clear that death can be caused as much by excessive fluidity of blood as by its coagulation.

Chapter VI. *Observations by the English.*—This science of simple infusion was more widely extended by the English, and a method sought by which blood could be transfused from one living being to another. Many observations of this sort can be read in the volume on the subject which the Royal Society, or Experimental College, at London is preparing now about the present argument.

Then, too, one may find in the *English Journal* the experiment of C. Dn. D. Lower, which he made at Oxford and of which he told in letters to Lord Boyle. In this is disclosed the method which he used in transfusion, through tubes made of quills, from the carotid of one dog to the jugular vein of another. It seems that the Excellent Dn. Dionysius, professor of philosophy and mathematics at the University of Paris, copied this method; but in copying it he improved it in several ways. Therefore in place of the former we shall substitute here the more recent experiment which Dn. Dionysius made on two dogs at Paris, and which he recounted almost as follows in the *French Scholars' Journal* for the current year, edited by M. Martius:

One dog was a male, the other a female. The female was full of strength and a little larger than the male; for she was twelve thumbs tall, while the male was only ten. Since we wished to preserve the life of each, we were unwilling to attempt the dangerous dissection of the carotid. Therefore we exposed the crural artery of the female, which, since it is farther from the brain and runs less deeply, may be dissected more safely. In the male, after cutting open the skin, we exposed the jugular vein.

Then two ligatures, about an inch apart, were applied to the artery. The lower of these had a knot drawn tight or firm; the higher, or the one nearer the heart, had a knot that was loose and could be easily undone. Between these two ligatures we introduced a very fine copper tube, a thumb long, and curved at one end, so that the curve was toward the heart; this was to receive the blood when the loose knot was untied. This curved end had a narrow rim around it, so that no thread which was fastened to it could slip off.

In the same way we attached two ligatures to the vein of the other dog; the distance between these was the same as in the first case, and each had a loose knot. Between these we inserted two tubes like that we used on the female, in such a way that the curve of one was turned toward the heart so that it could carry off the blood when its knot was loosened. The curve of the other was turned toward the head so that, when its knot was loosened, it would receive the blood which slipped down and empty it in a basin.

In the female, then, the artery was firmly bound to the head of its tube, and in the male, too, the vein was held fast by the two ends of the inserted tubes. Then, placing the dogs in such a position that the female's leg lay opposite the male's neck, we inserted the first tube, which had been fastened to the artery, into the second, which had been inserted in the vein, curved toward the heart. After the three loose knots were undone, we saw not only that blood was transmitted from the crural artery of the female into the jugular vein of the male, but meanwhile that nearly as much blood as he received from the female flowed from the male into the basin placed under the third tube.

---

* A Twenty-five Years Ago column, made up of excerpts from the official journal of the California Medical Association of twenty-five years ago, is printed in each issue of California and Western Medicine. The column is one of the regular features of the Miscellany Department of California and Western Medicine, and its page number will be found on the front cover index.

† From the University of California Medical School Library.

‡ Part I of this translation of the *Clysmatica Nova* of Elsholtz was printed in California and Western Medicine, June, 1933, page 432; Part II in July, page 45.

On this account I became more convinced that blood did indeed pass from the artery of the female into the vein of the male, and that it did not coagulate in the small intervening space, which was about three fingers long. For this reason I immediately ordered the first tube to be disconnected from the second. Nevertheless, we discovered that the blood which was disposed of in this manner, as if it were to remain in the pipe, both moved and was decidedly warm. Besides, its flow was very easily perceived by placing a finger below the ligature on the vein of the male, for an unusual warmth and swelling were felt there. There was no sign of this, however, when I pressed the female's artery with my finger, for, being impeded in this way, just that much less blood entered the connecting tube.

It should be mentioned here, in order to make it clearer, that a pipe made of a medium-sized quill (as depicted in Fig. III, letter *o*) is inserted between the first and second tubes. This is done (1) so that, because of the transparency of the quill, one can see more quickly if the blood is flowing properly. (2) If the tubes are too short they can be connected by adding one or more quills, as necessary.

During the operation I noticed that the third tube, which was attached to the jugular of the male, discharged far more blood than it ordinarily would have done. Without a doubt the reason was that it received through the second tube the arterial blood, which, entering the veins in a compact body in the middle of the circulating blood, necessarily emitted the same amount.

After nine ounces of blood had flowed from the male through the third tube into the basin, the female, which had lost the same amount, began to grow weak, as if she were exhausted. On this account we immediately stopped work and bound the loose knot deeply into her artery. At the same time we inserted two strong ligatures into the male's jugular vein in place of the two loose knots. And so, freeing the dogs from their bonds, we let them go.

The female, which had given the blood, was quite weak, and had only enough strength to go off in a corner of the room and stretch herself out on her uninjured side. On the contrary, the male, which had received new blood, seemed strong; indeed, when his feet were untied he tried very hard to shake off a halter which had been placed on him to prevent his barking.

A few days later this same Dn. Dionysius made another experiment, transmitting from this same male dog the blood which he had recently received from the female into a third dog; this was done very successfully. In the same way, he undertook to transfuse the blood of a young, healthy dog into an old mangy one. To repeat all of these experiments here would take too long and would be superfluous. Moreover, the accompanying illustration shows the operation itself.

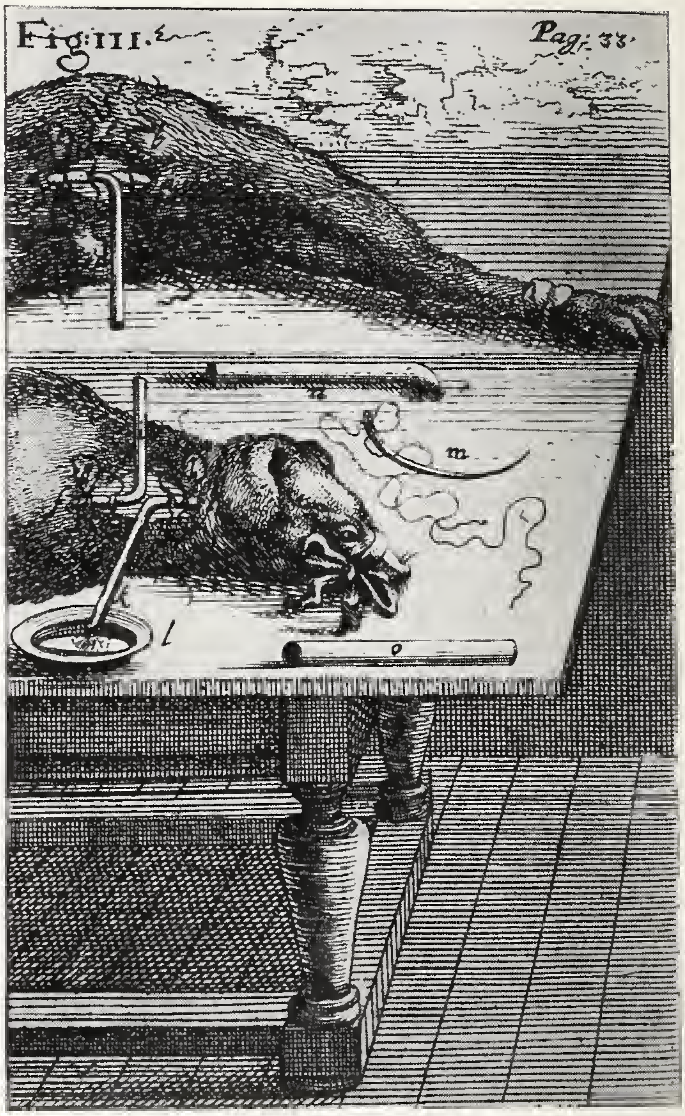


Fig. 5.—Illustration from Elsholtz' *Clysmatica* (1667), showing how blood may be transfused from one animal to another. (From a copy in the University of California Medical School Library.)

Explanation of the letters in Figure III, in which transfusion of blood from one animal to another is shown: *aa*, crural artery, exposed in dog; *b*, tight ligature; *c*, loose ligature, or with loop; *d*, first silver tube, inserted in opened artery; *e*, ligature binding artery about tube; *ff*, jugular vein, exposed in other dog; *g*, lower loose ligature; *h*, upper loose ligature; *i*, second silver tube, with its tight ligature; *k*, third silver tube, with its tight ligature; *l*, basin to receive blood; *m*, curved needle, threaded; *n*, form of silver tube with rim, for use with animals; *o*, pipe of medium-sized goose quill, inserted between first and second tubes.

Note.—Tube *n* is shown in adequate size; tubes *d*, *i*, and *k* are proportionately smaller.

Chapter VII. *Observations by the French.*—The French progressed even further; they brought blood transfusion from animals to man himself by injecting the blood of a lamb into the veins of a human forearm. The accompanying illustration (Fig. IV) shows an example of this. Dionysius has related in a letter two investigations made at Paris. The argument of his letter is also given in the *French Journal* of the past year, edited by M. Junius, almost as follows:

In short, this transfusion of blood, which some believe impossible, which very many consider most dangerous, and the majority think useless, is an actual fact and has been employed on two men. What is more, the first experiment cured a man suffering from quite a serious disease. Because of the briefness of this study, I shall not repeat here all the things which can be said against this operation and, indeed, have been said by so many. Let it suffice to mention the primary arguments for the usefulness of this work.

First, this new art of blood transfusion must be considered as nothing else than an imitation of nature, since, to nourish the fœtus in the womb, she employs a continuous transfusion of blood from the mother to the tiny embryon, through the umbilical vein.

Second, to have a transfusion is nothing else than to be nourished in a way much more intrinsic than usual; that is, to inject in the veins blood which is already prepared, in place of food which is turned into blood only after many changes. Besides, this easy method of nourishment is seen to be preferable to the other; because food which is taken through the mouth, since it is compelled to pass through many parts of the body, some of them poorly arranged, can become infected by bad properties before it enters the veins. Therefore it is liable to various changes which could undoubtedly be avoided if prepared blood were introduced directly into the veins.

Moreover this operation reconciles disagreeing doctors, those who approve of opening the veins, and those who disapprove of it; the latter, because the operation lets out impure blood, and the former, because the strength of the patient is not diminished.

Finally, reason itself maintains that those who are weak from intemperateness of disease and from impurity of blood are necessarily cured by infusion of pure and very temperate blood.

But surely it can be seen that it is a barbarous act to save the life of one man by using the blood of another; that is, to prolong the life of the former, and cut short that of the latter. The reply to this is manifest; obviously there is no need of human blood to save a man. The blood of animals is suitable for this purpose; rather, is preferable.

Certainly men, since their minds are perturbed by varied emotions and since they too little observe right rules of eating, must have blood far more impure than that of animals, which clearly are not liable to these mistakes. Therefore the blood in animals' veins must always be pure; but in the veins of even exceptionally healthy men, blood is scarcely ever found without some taint or sign of corruption. This is true even of infants, because they, too, since they are fed by maternal blood and milk, suck in impurities together with their nourishment.

Besides, why is the blood of animals not suitable to human nature? Certainly it is not different in quality from milk or flesh, by which men are generally nourished. Nor is the decree of the Apostles in Acts, ch. xv, 29, opposed to it; for it must be known that this refers to taking blood through the mouth, not to injecting it through the veins.

For indeed, if the Anthropophagi, as writers of naval discoveries relate, are subject to many serious diseases from which their neighbours, who eat the flesh of animals, are free, it follows that as human flesh is less healthful than that of beasts, human blood also is less suitable for transfusion.

Besides, to cure diverse diseases, blood is required now warmer or colder, now thicker or thinner; just as these different qualities are more prevalent in different animals, so their blood will be better fitted for transfusion than that of men, in whom there is not such a wide diversity.

There is also this advantage—that, if anyone uses the blood of animals for transfusion, he can work with greater confidence. Moreover, he can prepare the animals beforehand through their food, suiting it to his purpose.

The first work of consequence in these experiments was undertaken on a youth about fifteen years old. He suffered from a stubborn fever, and in two months had had his veins opened twenty times. Nevertheless, although he was ordinarily of a well disposed nature and very active, he became entirely indolent, sleepy, and stupid. He nearly lost his memory; his mind grew dull; and although he slept ten or eleven hours every night, nevertheless he would lie down during the day and fall asleep, no matter whether he was eating or doing anything else which generally prevents somnolence.

The doctors judged that this lethargy was caused by a little residuary blood, which had been made too thick by the heat of the fever, and that this thickness could certainly be corrected by an infusion of new blood. This remedy being approved, a vein in the patient's forearm was opened, and about three ounces of heavy, black blood let out; then eight ounces of blood from the carotid of a lamb were immediately injected through the same opening.

The patient was well during the operation, except that he said he felt an unusual warmth all the way from the opening in the vein to the axillary; this sensation was undoubtedly caused by the heat of the flowing arterial blood. After the vein was bound up he immediately felt less sluggish, he no longer fell asleep while eating, he gradually became more cheerful, and, shaking off his torpor, regained his alertness in the following days.

Moreover, an experiment was made, through curiosity rather than necessity, on a carrier, a strong, healthy man, forty-five years old. He was given a little money, and underwent the transfusion in a happy state of mind.

Since he was plethoric, ten ounces of his blood were let out, and then in turn nearly twenty from the crural artery of a lamb were injected in him. Just as in the other case, he felt the same sort of warmth toward his axillary, but suffered very little from it. In fact, during the operation itself, he did not cease marveling at the extraordinary discovery of blood transfusion.

After his wound was bandaged, he was advised to spend the rest of the day quietly at home, and he promised to do this. But at noon he had a chance to make some money, and carried a chair as usual, asserting that he had never felt better. He also asked, if this work was to be repeated, that no one should be called upon for it except him.

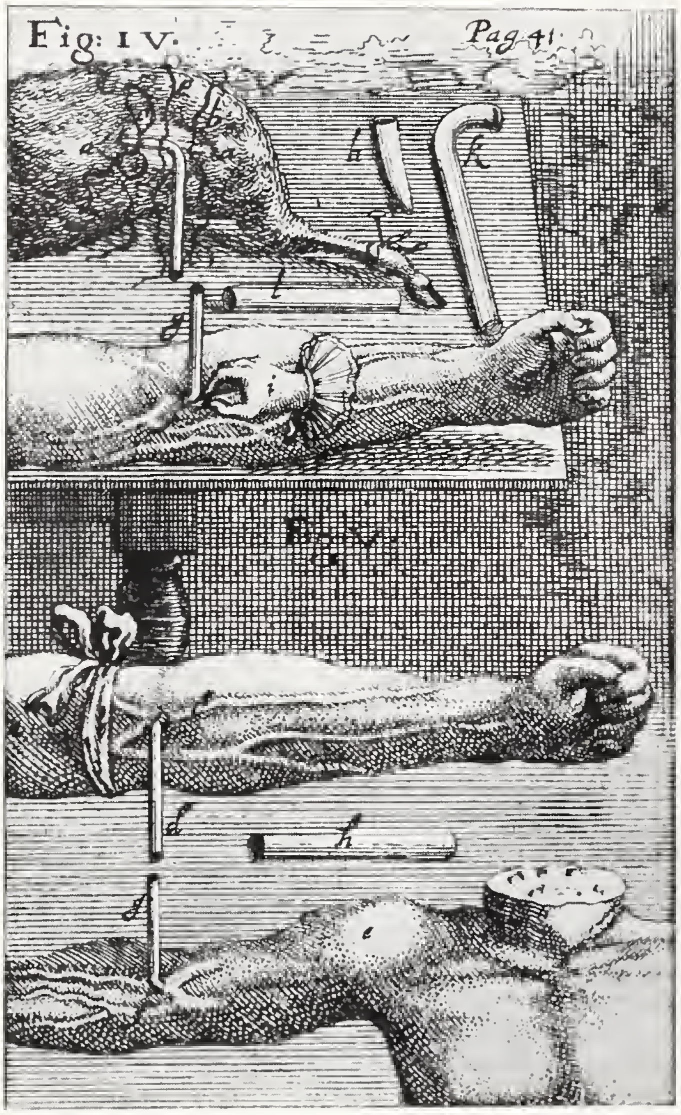


Fig. 6.—Illustration from Elsholtz' *Clysmatica* (1667), showing how blood may be transfused from animal to man, or from one human to another. (From a copy in the University of California Medical School Library.)

Explanation of the letters in Figure IV, in which transfusion of blood from an animal to a man is shown (upper half of figure): *aa*, crural artery exposed in lamb; *b*, tight ligature; *c*, loose ligature; d. first silver tube, inserted in artery; *e*, ligature holding artery about tube; *f*, median opened; *g*, other silver tube, inserted in vein; *h*, stopper for tube, made from quill; *i*, hand of surgeon, compressing skin; *k*, form of silver tube without rim, for use with man; *l*, pipe made of quill, inserted in each tube.

Note.—Tube *k* is shown in adequate size; but the proportions of tubes *d* and *g* are diminished.

⁂

Fig. V. Transfusion from one man to another (lower half of figure): *a*, forearm giving blood; *b*, ligature around it; *c*, its median opened; *d*, silver tube inserted, and curved toward hand; *e*, forearm receiving blood; *f*, its median opened; *g*, silver tube inserted, and curved toward heart; *h*, pipe made of quill to connect tubes.

Note.—I. The hand of the surgeon compressing the skin has been purposely omitted, since it is sufficiently clear from Figure IV, letter *i*.

II. The illustrator has shown tubes *d* and *g* in small size, observing the proportions; the proper size of the others is apparent from Figure IV, letter *k*.

III. Three types of incision with a lancet can be made, according to size; that is, small, medium, and large. Therefore it should be observed that the medium alone is completely suitable to tube *k* in Figure IV. For the small incision would not admit the tube which should be inserted, and the large would waste too much blood.

IV. If a correct proportion is observed between the incision and the tube, so that the latter fits exactly into the opening, there is scarcely any need of compressing the skin; it is sufficient to place a very little cotton around the opening.

V. If, because of a rather large incision, compression is necessary, it should be moderate, and done without puckering up the skin; otherwise the flow of blood is completely checked.

VI. Of course, for a larger incision, heavier tubes can be used; but experience shows that all liquid vibrates more strongly and for a longer time through a narrower tube.

VII. The blood in the forearm of the person giving it should not be thick but thin and fluid in nature, because when this is so, since it has been subject to friction in the warm metal, it can then enter the blood stream more fittingly. Once, when the first blood, because of its thickness, went through the inserted tube poorly, I ordered the tube to be withdrawn, and several ounces of the heavier blood let out. When this had been done and the tube was reinserted, we noticed that the succeeding thinner blood passed through it easily.

VIII. The type of man to give part of his blood to a weaker person must be strong, young, and plethoric, and have blood which is suitable for vibration. For when transfusion takes place between two weak people, or when the existing blood is too thick, the operation either will not succeed at all or will proceed less fortunately.

Indeed, in the month of October, when this present little book was imprinted, a Latin version of the *French Journal,* in two volumes, issued at Lipsia (Leipsic) before the last autumn market day (nundinas), was brought to us. At the end of the second volume, in the forty-second ephemeris, the following observation is related from the letters from Paris.

"It is not long ago," says the author, "that the doctors attempted a new experiment on a certain noble Swede, whose life was despaired of. Although he was then half dead because of a fever, together with bilious diarrhœa and a weak liver, he was restored during a transfusion of blood from a calf, so that he could speak again and understand words. Nevertheless, two days later, since his intestines were decayed and the ileum had turned back on itself from top to bottom so that it was impossible for him to live, he breathed his last.

"Moreover, under Duke Guisius, the blood of two rams was infused in an old horse, which then became strong and vigorous."

⁂

Chapter VIII. *Experiments Made at Borusia.* At this point I cannot forbear to make most honorable mention of Cl. Virus D. Jo. Dan. Major, state professor at the Academy of Kiloniens, who, in 1664, published a treatise about the present subject, entitled "The Labor Involved in Employing Surgical Infusion." In this he expounded his ideas learnedly and accurately for posterity, and he deserves great praise on this account. For the rest we wish to say—with due respect to the author—that there are people who consider this book merely theoretical, and particularly feel the lack in it of experiments made by the writer himself.

For it is clear that arts are not completed by theorizing alone. If they were, and if we had wished to obtrude on the world our ideas alone, without proof, we could have completed our little book on this work without difficulty and in the ordinary manner in that same year, 1661, in which, through the anatomical help mentioned in Chapter II, we had both the opportunity and the occasion.

Moreover, this same D. Dan. Major, in the present year, 1667, composed in common right his *Winter Pleasures,* or *Three Medical Discoveries,* in which he tries sedulously to prove that he discovered this new science at the same time that we did, and he reproaches us, in a friendly manner, because we made no mention of him in the first edition of our *Clyster.* Surely I am blameless, since he had not done anything in connection with his *Surgery*, when my *Observations* had long been both made and told in letters; otherwise he would never have felt the want of the increasing praise of an eminent friend. Besides, I do not see in his *Pleasures* any experiments which I can cite here, except those foreign Gedanensian ones, whose history Dn. D. J. Mollerus, a Dantiscan doctor, has reviewed in letters from Dantisci, dated February 27, 1666, to a friend in Hamburg. A translation of his German words follows:

Two sick people in our community perceived the very great usefulness of this new discovery. The first was a soldier, so badly infected by syphilis that no cure could free him of this plague. He had ulcers on his tibiæ, his right forearm was swollen and drawn up, and the pain in his head was so severe that he shrank from the touch of a hand on it. The Gedanensian doctors brought speedy relief to him by the infusion of a certain liquid in a vein; within twenty-four hours not only the pain in his head but also the tumor and the paralysis of his forearm had completely disappeared. Moreover, in three days the ulcers had healed without the application of plasters.

Furthermore, a serving maid, who from birth had been subject to epilepsy, through the help of the good Lord and the power of this remedy, regained her health so that after several months she was completely cured of this disease.

Certainly, unless some subtle person has doubts about the credibility of this narrative, it must be confessed that these two cures recounted by D. Mollerus are far superior to all those which have been made at Paris.

(To be concluded)

Lord Moynihan's Tribute to W. W. Keen.—One of the things in which Lord Moynihan excels is a keen sense of the personal qualities of his compeers, and in the grace with which he can express it. Writing to the *Lancet* on the news of the death at the age of 95 of his "very dear old friend Dr. Keen," he says: "His eagerness in every form of intellectual pursuit never ceased to astonish his friends, sometimes even perhaps to embarrass them, for in pursuit of knowledge he spared no man. . . . His textbook of surgery was the first in our language to be based on bacteriology; it almost alienated our affections from 'Erichsen.' Many men considered him—though having heard Nicholas Senn and J. B. Murphy, I could never agree—the greatest teacher of clinical surgery America had ever known. His virility and force were well matched with sincerity and invulnerable accuracy, and tempered with sobriety." He was the protagonist of our ideas on vaccination, vivisection and laboratory research. "He was a man of decided views emphatically expressed; but he was, no less, the very flower of culture, the very perfume of courtesy. He had the happiest knack, excelled not even by Osler, of keeping in touch with his friends in all lands. It was justly said of Osler that many men in many lands hugged the belief that they were his particular cronies. That was certainly true of Keen." Coming to technical matters: "His work on the brain, nervous sytem, abdominal organs, upon the ravages of typhoid fever in their surgical relations, indeed upon all branches of surgery—and he practiced all with immense success—was perhaps the most considerable and the most inspiring of that of any surgeon in the states."—*Journal of American Medical Association*, Vol. 99, No. 4.

CLINICAL NOTES AND CASE REPORTS

SKELETAL TRACTION

By H. W. Spiers, M. D.
Los Angeles

THE development in the application of skeletal traction methods in the field of fracture surgery has been one of the noteworthy advances in the last few years. I should like to present here certain accepted methods and discuss their advantages and disadvantages, the wide variety of their uses, and also certain points in technique which more recent experience has brought out. The variety of instruments now in use are as follows: the Steinman pin, the ice tongs, the rigid stainless-steel pin, and the taut piano wire.

INSTRUMENTS

Steinman Pin.—The Steinman pin has the advantages of being removable both ways, thus preventing contamination of the wound. Its disadvantages, as have been found, are that it is weak and will frequently, under traction, bend or break at its central telescoping joint. This is a serious defect.

Ice Tongs.—In the case of the ice tongs, they would seem to have some advantages over other methods since they do not go entirely through the bone. They have, however, been largely discarded because of their tendency to slip or drag. There is difficulty in holding them immobile. They are not fool proof. The patient or his friends can often disturb them seriously.

Rigid Steel Pin.—The rigid steel pin has some followers. In many ways, I prefer it. The size and strength can be adjusted readily to the needs. It may bend under extreme stress, but it does not break. A disadvantage, of course, is that one end must be rendered aseptic when the pin is removed. This, however, is not difficult. A thorough cleansing, followed by ether and iodin, is sufficient in my experience.

Taut Piano Wire.—The taut piano wire is the newest method developed in this field. The original schemes for insertion of the piano wire, were quite complicated, but this recently has been overcome. Now the wire whose end has been shaped as a drill, can be fed through a simple appropriately designed brace and very readily placed. The advantages of the very small wire in the case of the smaller bones is evident. The radius, the ulna, the metacarpals and phalangeals, can be readily drilled with the wire. The size of the wound also recommends it. The objections brought forward are twofold. First, the wire is so small that it might pull through the bone under continual stress; I have not found this to be the case. Second, when this method is used in conjunction with rigid plaster fixation, the collar which keeps the wire under tension must be left in place. This is awkward. Also, as in the stainless-steel pin, when the wire is removed one end must be sterilized.

ADVANTAGES OF SKELETAL TRACTION

The advantages of skeletal traction for fractures of the shaft of the femur is well known. Its use through the olecranon for the fractures of the humerus is also common practice. The use of skeletal traction in fractures of the radius and ulna is a newer development and promises much. Traction through the phalanges for fractures of the metacarpal bones or phalanges themselves is becoming increasingly popular. Traction through the metatarsals with countertraction through the os calcis is being used with excellent results in compression fractures of the tarsal bones or in the reduction of some of the difficult transtarsal fracture dislocations. Traction through the metacarpals with countertraction through the olecranon process will often allow easy reduction of compression fractures and dislocations of the carpal bones.

Handled rightly, skeletal traction represents an ideal method. It is, however, a very exacting one and the surgeon must be familiar with all the problems at hand to handle it successfully. The question of infection about a pin through a bone is best solved by rendering the area aseptic and sealing it so and not disturbing it until the pin is removed. The secret in the keeping of a skeletal traction pin free from later infection, I believe, lies in seeing that the pin is firmly placed so that there is no motion at all between it and the bone, or it and the soft tissues. It must not be allowed to slide laterally or angulate. The technique I have found successful is as follows:

1. Sterilize the parts as for any clean operative procedure.
2. Insert the pin, making a nick in the skin only at the point of entrance and exit. See that the pin is directed at right angles to the line of traction.
3. Seal the wounds, after applying iodin and alcohol, with a circular gauze pad saturated with compound tincture of benzoin.
4. If the collar does not fit snugly (is too large, it must not be applied too small) block the space between the dressing and the collar with suitable-sized cork or rubber washer. A wet, inch-size plaster-paris bandage can be made to answer the same purpose easily.
5. Do not disturb dressings, pin, or collar unless there is a definite indication.

2007 Wilshire Boulevard.

BLADDER NECK PATHOLOGY IN THE FEMALE

By Clayton Lane, M. D.
Los Angeles

Many irritable bladder necks and urethral inflammations in the female are often diagnosed by the attending physician as cystitis.

Now cystitis *per se* is a mucosal reaction within the bladder which produces the classical symptoms coincident with such conditions. While the most common symptom is urinary frequency, yet dysuria and hematuria may be present. The true cystitis of bacteremic origin is quite constantly secondary to some distant pathological focus. If, however, the bladder reaction is due to some local disturbance, then stone, tumor, or an extravesical obstructive factor is the cause commonly expected by the urologist.

A careful urological examination is necessary in order to differentiate the true cystitis from another bladder condition met within the female.

Presented to the clinician quite frequently is the female patient complaining of occasional attacks of mild urinary frequency with or without burning on urination. Investigation of this type of patient will reveal no bladder pathology to account for existing symptoms except an inflamed or edematous bladder neck with occasional small polypoid protrusions. Urethroscopic exploration of the urethra will show a moderate inflammatory mucosal reaction with considerable urethral tenderness upon palpation.

The probability is that the bladder neck reaction is secondary to a primary urethritis which had its origin in repeated trauma. The female urethra being, by virtue of its location, quite susceptible to bacterial invasion, becomes rather easily infected in view of the traumatized mucosa. Considering the fact that the majority of such cases is observed in married women, the cause of such urethral injury is rather easy to imagine.

The urinary changes in these patients are quite characteristic in that Thompson's two-glass test will show a hazy first and clear second. If one use care in carefully cleansing the urethral meatus and its surrounding area, the two-glass test will be found very helpful as an aid in examination.

In the consideration of the patient who complains of so-called bladder symptoms, the general clinician should be ever on his guard in order to differentiate between a cystitis and an irritable bladder neck with urethritis.

The curative procedures in the case of cystitis have for their direct purpose the eradication of the primary etiologic factors with treatment directed at the inflamed mucosa.

In the patient with bladder neck pathology and urethritis, the causative factor must be removed and treatment directed to clear the local condition present. This type of patient is usually subjected to repeated bladder irrigations and the injection of urinary antiseptics, all of which do no good and can only discredit the ability of him who is ever so anxious to effect a cure.

1052 West Sixth Street.

One of the most important lessons that we should appreciate is the great complexity and the vast scope of the field of public health. It is not a definite science, but comprises a great body of knowledge about as broad as experimental science itself. For that reason the study of public health should be excellently adapted for general educational purposes. In this field, not only are the fundamentals of practically every laboratory science applied, but here is ample opportunity for the study of classics, the humanities, social problems, and economics; for all civilizations have been profoundly influenced by problems of health and disease. (D. J. Davis, *Illinois Medical Journal*, November, 1929.) *—Weekly Bulletin, California Department of Public Health.*

BEDSIDE MEDICINE FOR BEDSIDE DOCTORS

An Open Forum for brief discussions of the workaday problems of the bedside doctor. Suggestions of subjects for discussions invited.

URTICARIA

Merlin T-R. Maynard, M. D. (Medico-Dental Building, San Jose).—At the patient's first visit, the etiologly of urticaria is obscure in the great majority of cases. Exceptionally, the patient has found out through personal studies of his reactions that he is definitely sensitive to certain foods or contacts. However, in these clearer cut cases, too much credence should not be put on the patient's beliefs, because of a frequent inaccuracy of observation; and also quite as frequently more than one substance or a number of substances are found to be responsible for the patient's disability. Foods should be first considered. Also whether or not the patient had an upset stomach prior to, or coincident with, the attack; and also whether he was upset or developed the eruption within a reasonable time of having eaten the suspected substance. Next, drugs should be considered and the ingestion of laxatives, cold remedies, headache powders and other household remedies investigated. External factors such as cosmetics, epidermals, exposure to sunlight and other physical agencies are likewise to be kept in mind. Foci of infection, particularly in the gall-bladder, must also be evaluated. If the patient is subject to nervous upsets, it should be recorded in the history as a possible causative factor. A careful allergic history is of prognostic importance.

As a basic factor in the etiology of urticaria, we find that many of the cases fall in the group described by Stokes and other writers, in which group a lowered secretion of hydrochloric acid in the stomach, or an actual absence of acid is the agency through which the sensitization is brought about. In such states, toxic products are formed through bacterial action on protein in the stomach, duodenum and upper jejunum. The course in these cases may be outlined approximately as follows: The Welch bacillus is a normal habitant of the lower jejunum and ilium as well as the caecum. Its ascent towards the duodenum is retarded by the expulsion of the acid chyme from the stomach. If this acid is lacking in the gastric contents, the Welch bacillus may actually be found in the upper doudenum. This particular bacillus elaborates through its action on proteins the so-called "H," or histamine-like substance. Although this substance is not readily absorbed from the known habitat of the Welch bacillus, it is assumed that it is rather readily absorbed in the area of the duodenum. This "H" substance, when it accumulates in the skin, is apparently an active factor in the development of urticaria, and is found in increased quantities in urticarial subjects. The mechanism of its action allows it to produce extreme relaxation of the capillary walls, and allows actual leakage of fluid. The calcium of the blood stream was for a long time considered to be decreased in urticaria, but more recently has been found to be normal or above normal in its quantity. It is quite possible, however, that the tissue calcium may not show similar changes. That calcium has a definite rôle in urticaria is presumptive in some cases, particularly those of the resistant and of the giant type. This is demonstrated through the favorable response of these patients to the injection of the parathyroid hormone.

The prognosis of urticaria is in the great majority of cases quite favorable, and definite desensitization may be successfully carried out. However, a few cases, particularly of the angioneurotic type, will resist all types of treatment.

* * *

Moses Scholtz, M. D. (1930 Wilshire Boulevard, Los Angeles).—Urticaria is commonly viewed by the general profession as one of the simplest types of dermatoses. It is generally understood that urticaria is not an independent nosological entity of definite etiology, but merely a syndrome or skin reaction which may be induced by any number of external or internal pathogenic factors, including psychogenic ones.

However, the average practitioner little realizes the morphologic complexities, the difficulties of proper classification of the various types of urticaria and of their relationship to other dermatoses.

The basic lesion of urticaria is the well known wheal, a pale plaque surrounded by a pinkish area and associated with burning and itching. It is of interest that itching precedes the formation of the wheal. For this reason the French school places urticaria in the group of pruritus.

At times, particularly in regions with loose connective tissue, the urticarial wheal may assume gigantic size and grotesque contours forming giant urticaria or angioneurotic edema.

Histopathologically the wheal shows a localized acute edema without inflammatory reaction. The upper layers of the cutis and particularly the papillary layer are very edematous (Gilchrist). In the type designated as urticaria porcellanea the edema of these tissues is developed to a very high degree; the pressure of the fluid content of the supporting tissues compresses the most superficial blood vessels to such an extent that practically no blood enters them and the result is a porcelain-like appearance of the wheal. The lymph spaces are considerably dilated, whereas the superficial blood vessels are somewhat constricted, those of the deeper layers being dilated and engorged with blood. An inflammatory cellular exudate is practically absent. The absence of inflammatory cells in the exudate at first caused this edema to be looked upon as a transudation, but since it is found to contain more albumen than normal serum, it must be considered as a real inflammatory exudate. The absence of cellular elements is therefore explained by the fact that the process exists for too short a period of time to allow their accumulation.

The wheal, although of very short duration, is usually the end stage of the process. However, it can develop either to the formation of vesicles (urticaria vesiculosa) or to the formation of chronic papular areas attended by marked cellular infiltrate (urticaria chronica papulosa).

When the toxin or irritant is unusually strong and gravely affects the permeability of the vascular walls, urticaria may become vesicular or even hemorrhagic, urticaria vesiculosa or hemorrhagica. Both of these types are relatively rare, but do occur. In the hemorrhagic variety the blood pigment undergoes the usual transformation, leaving behind brownish macules. This form of urticaria with pigmentation should be differentiated from urticaria pigmentosa, to be discussed later.

Urticarial wheals in the majority of cases occur by themselves, and in such cases can be regarded as primary lesions and as an independent clinical syndrome. But not uncommonly urticarial wheals appear in combination with other dermatoses. Thus, Eichenlaub, in reporting a series of fifty-eight cases of urticaria, found twenty-eight cases associated with erythema multiforme. In fact, these cases constitute the true borderline cases in which the lesions of both dermatoses are so similar both morphologically and pathologically, that it is practically impossible to differentiate one from the other.

Urticarial wheals may be also observed in combination with allergic eczemas, drug rashes, pyogenic and mycotic infections.

Extremely interesting and puzzling in certain ways is urticaria factitia or dermographism. It often occurs in urticarial patients but is observed also in individuals free from urticaria. While perfectly simulating the morphologic picture of urticaria, dermographism presents some clinical differences: it does not itch, it develops only on mechanical irritation of the skin, and it seems to be a constitutional weakness or vascular irritability of the skin rather than a temporary disorder.

Much less known and entirely different in gross pathology and morphology is the papular type of urticaria, so-called lichen urticatus or strophulus. Papular urticaria is characterized by a small firm papule surrounded by an urticarial wheal. The wheal disappears and recurs but the papule remains. These persistent papular urticarias are observed mostly in undernourished children. Occasionally these cases gradually develop into prurigo mitis hebra. This nosologic relationship well illustrates the complexity and the obscurity of the pathogenesis of urticaria.

The morphology, histopathology and clinical behavior of the papular urticarias differ so strikingly from ordinary urticarial lesions that one could hardly at first glance accept the two conditions as being of the same nature. Yet at various stages one can observe minute urticarial wheals arising spontaneously or on friction of the papules.

Microscopically, in the period in which urticarial wheals are absent, edema is practically absent or limited to the subpapillary layers of the cutis, and the cellular infiltrate dominates the picture. The brown color is due to the increased number of chromatophores.

To increase the confusion, some dermatologists describe chronic papular urticaria with a necrotic center and tuberculoid structure (Gans, Hoffman, Kaposi), the so-called urticaria papulosa perstans necrotica and acne urticata. It is safe for the average clinician to ignore this superrefinement of dermatologic classification and to regard it as an open and controversial issue.

Still more interesting and puzzling from a clinical point of view is urticaria pigmentosa. Urticaria pigmentosa occurs in children as well as in adults. It is characterized by multiple (from a few dozen to many hundred) brownish, yellowish or slate colored elevated spots or nodules, varying in size from a pinhead to a fingernail, distributed mainly on the trunk and limbs. Their urticarial nature is revealed on friction or scratching, when a small urticarial itchy wheal arises.

Histopathologically the condition is characterized by the finding of mast cells which are constantly present in infantile cases; however, they may be absent in adult cases.

In analyzing various types of urticaria and trying to correlate their morphologic and histopathologic differences, one is inclined to infer that basically the urticarial lesion is merely a skin reaction which may occur under various conditions and which is often an incidental feature of certain dermatoses such as papular urticaria and urticaria pigmentosa.

I personally believe that the term urticaria, as a clinical conception, should be reserved for the cases with urticarial wheals only, and that papular persistent types, lichen urticatus and urticaria pigmentosa, should be disassociated from the urticarial group. They could be called urticaroid dermatoses, just as we have pemphygoid dermatoses, which present morphologic pemphygoid features, without being pemphygus itself.

The association of urticaria with erythema multiforme is perfectly natural and plausible, as both conditions present a perfect type of the acute toxic skin reaction.

* * *

SAMUEL H. HURWITZ, M. D. (490 Post Street, San Francisco).—Of very frequent occurrence and usually regarded somewhat lightly by the physician, hives present one of his most difficult therapeutic problems. Whereas a serious attempt to find out all the possible underlying causes of a case of urticaria, particularly of the chronic form, is decidedly worth while and frequently leads to a brilliant therapeutic result, the general practitioner may find comfort in the well known fact that symptomatic and nonspecific treatment is in many instances equally helpful. A proper diagnosis should begin with a thorough history and physical examination: the patient's food and drug habits, the presence of constipation or other intestinal symptoms and the psychic state of the individual are all important. A worth while physical examination should stress particularly the general nutrition, condition of the blood and foci of infection. It is common knowledge that urticarial attacks may follow the excessive ingestion of certain foods, particularly in children where intestinal permeability to incompletely digested protein may be facilitated by digestive upsets, constipation or errors in diet, and this quite apart from any specific hypersensitivity, although in the majority of cases the urticaria is an allergic reaction following the ingestion of specific foods and drugs and at times exposure to physical agents: light, heat, and cold. Of the drugs, arsenical preparations, antipyrin, aspirin, iodids, bromids, quinin and morphin are frequently mentioned. Good treatment should therefore aim first to correct the obvious defects elicited by a careful history and physical examination.

The recognition that urticaria is a common skin manifestation of serum disease and that certain constitutional reactions from injections of extracts of foods, animal epidermals, pollens, etc., are frequently attended by urticaria, has done much to stress its allergic etiology. If it is suspected that the urticarial lesion be of this origin, a specific diagnosis can be made only by an exhaustive history of associated allergic manifestations, not only in the patient but also in the patient's antecedents, and by resort to cutaneous testing, elimination diets and the food addition method.

As to positive skin tests in urticaria, most workers in this field agree that they are relatively infrequent. Where they can be elicited and can be related to the patient's own history of food disagreements, they give definite leads to therapy with results that are often brilliant. The author has been fortunate enough to have obtained such results in some patients under his care. As a diagnostic and therapeutic method, we have not found elimination diets to possess greater value than the so-called food addition method. In fact, we prefer the latter method because of its greater simplicity. No complicated menus and recipes are needed to carry it out. The patient is put on an exclusive milk diet for about a week and if the urticaria clears up it proves the cause to be some food or foods other than milk. Other foods are then added to the diet one at a time every few days, the physician carefully observing the patient for any reappearance of urticaria. In this way the offending food or foods may be detected. If the urticaria does not clear up after about a week of an exclusive milk diet a diet of all kinds of food except milk and milk products is substituted. If the urticaria disappears on such a diet, milk is proven to be the offending food.

Although foods are by far the commonest cause, urticaria may also be due to sensitization to animal epidermals, pollens and drugs. Some workers report instances of urticaria due to sensitization with bacterial products arising from foci of infection in the bowel, biliary tract, teeth and sinuses. G. T. Brown of Washington, D. C., reports good results from the use of autogenous vaccines obtained from these foci. Menagh of Detroit recommends duodenal drainage by means of the Jutte tube where biliary stasis is thought to be a cause.

The emergency treatment of acute urticaria consists in the prompt administration of a purgative, castor oil preferably, and epinephrin (0.5 to 1 cubic centimeter of a 1/1000 solution) hypodermically. The two drugs most frequently recommended for the undiagnosed chronic cases are calcium and peptone. Although some observers report low blood calcium values in urticaria, this finding is by no means well established. The results which are frequently seen following the administration of large doses of calcium must be attributed to other causes than the correction of a calcium deficiency. If used at all, calcium should be given in large dosage, for adults at least 5 grams twice daily before meals and its absorption assured by the addition of hydrochloric acid, cod liver oil, or parathyroid and ultra violet light, all of which have been shown to facilitate the absorption and mobilization of ionic calcium. Calcium gluconate is more palatable and less irritating than the lactate.

Of the various forms of non-specific therapy recommended in urticaria, we have found that peptone administered subcutaneously gives the best results. Auld of England recommends a 7½ per cent solution; other workers use concentrations as high as 33⅓ per cent. In our work we have found 15 per cent very satisfactory. The initial dose of this solution is 0.1 cubic centimeter increased by that amount weekly or twice weekly until one cubic centimeter is reached. Intracutaneous injections, if that method is used, must be limited to amounts not higher than 0.3 cubic centimeter. Dessicated peptone taken orally in capsules containing 0.5 gram, one capsule to be taken one-half to one hour before each meal, has been recommended by the French school as a method leading to temporary desensitization against food proteins. A limited experience with peptone orally has not convinced us of its value in urticaria.

Activities of the German Hygienic Museum.—In addition to the continuous work of the Deutsches Hygiene-Museum in Dresden, which supplies the whole German reich with material on subjects pertaining to health, mention may be made, in connection with the activities of the year 1932, of the carrying out of the annual health survey, which comprised three exhibits and numerous lectures and film presentations. During the year three traveling exhibits were constantly on the move, namely, "Man in Health and Disease," "Healthy Women Mean a Healthy People," and "The Fight Against Cancer." In Germany these three exhibits were shown in 1932 in twenty-one places and attracted 400,000 visitors. In addition, exhibits were sent to some foreign countries, chiefly Austria, Sweden, and the Netherlands. The traveling exhibits as a whole were set up in twenty-eight places at home and abroad, and more than 700,000 persons visited them. More than 20,000 photographs were lent to illustrate lecture courses.—*Berlin News Letter.*

California and Western Medicine
Owned and Published by the
CALIFORNIA MEDICAL ASSOCIATION
Official Organ of the California and Nevada Medical Associations
FOUR FIFTY SUTTER, ROOM 2004, SAN FRANCISCO
Telephone Douglas 0062
Address communications to the EDITOR, as per the above address.

EDITOR . . . . GEORGE H. KRESS
Associate Editor for California . . . . EMMA W. POPE
Associate Editor for Nevada . . . . HORACE J. BROWN

Advertising Representative for Northern California . . . . L. J. FLYNN, 544 Market Street, San Francisco
Advertising Representative for Southern California . . . . . A. A. BUTTERWORTH, 223 E. Fourth Street, Los Angeles

Subscription prices, $5.00 ($6.00 for foreign countries); single copies, 50 cents.

Volumes begin with the first of January and the first of July. Subscriptions may commence at any time.

Change of Address.—Request for change of address should give both the old and the new address. No change in any address on the mailing list will be made until such change is requested by county secretaries or by the member concerned.

Advertisements.—The journal is published on the seventh of the month. Advertising copy must be received not later than the 15th of the month preceding issue. Advertising rates will be sent on request.

Responsibility for Statements and Conclusions in Original Articles.—Authors are responsible for all statements, conclusions and methods of presenting their subjects. These may or may not be in harmony with the views of the editorial staff. It is aimed to permit authors to have as wide latitude as the general policy of the journal and the demands on its space may permit. The right to reduce or reject any article is always reserved.

Contributions—Exclusive Publication.—Articles are accepted for publication on condition that they are contributed solely to this journal.

Leaflet Regarding Rules of Publication. — California and Western Medicine has prepared a leaflet explaining its rules regarding publication. This leaflet gives suggestions on the preparation of manuscripts and of illustrations. It is suggested that contributors to this journal write to its office requesting a copy of this leaflet.

EDITORIALS*

LIBRARY BUILDING OF THE LOS ANGELES COUNTY MEDICAL ASSOCIATION

The Headquarters Home Recently Opened.—A few months ago CALIFORNIA AND WESTERN MEDICINE informed the members of the California Medical Association that the Los Angeles County Medical Association, after having held its meetings in rented quarters for half a century, had been able at last to realize a cherished ambition—the possession of its own home and headquarters. The January CALIFORNIA AND WESTERN MEDICINE, pages 50 and 66, told the story of the new headquarters building at 1925 Wilshire Boulevard, adjacent to Westlake Park. Mention was made of the two parcels of ground at Wilshire and Westlake, one parcel bringing to the Association an annual rental of $10,500, while the other, a corner lot of sufficient size to allow not only for headquarters with offices and meeting rooms, but also ample additional ground area for a future library building.

* * *

The Proposed Library Building.—The proposed library building is now to become a reality, for on July 12, on recommendation of the Permanent Quarters Committee through Chairman Carl R. Howson, the "Board of Trustees voted unanimously in favor of immediate construction of the library building," and Secretary Harry Wilson was authorized "to protect market prices for the building, so as to insure material costs at the low market of that date." To accomplish these ends, it was necessary to obtain a loan to finance the building operations; but this loan will have been liquidated, with clear title and without mortgage encumbrances when each member of the Association has paid his initiation fee of $100. The response of members thus far has been gratifying, but a full coöperation is necessary for complete success.

The annual rental income of $10,500 from the one parcel of ground, plus the dues and miscellaneous income, will permit the library and other activities of the Association to be properly carried on. Upon completion of the library structure, the Barlow Medical Library will become the property of the Los Angeles County Medical Association and will hereafter be supported by it.

CALIFORNIA AND WESTERN MEDICINE, on behalf of the organized medical profession of California, extends its best wishes on this happy culmination of long-deferred hopes. With the new library building, a medical center nucleus will have been established in Los Angeles that must go far in providing medical service of the highest type, thus demonstrating again the far-reaching possibilities of organized medicine.

"THE COMMITTEE ON PROFESSIONAL CONDUCT"—A NEW PROCEDURE INAUGURATED BY THE SAN FRANCISCO COUNTY MEDICAL SOCIETY

An Excessive Number of Malpractice Suits in San Francisco.—A by-law was adopted by the San Francisco County Society in November, 1932, making possible the institution of a new method of procedure as regards the application of the "Principles of Professional Conduct." This innovation should be of interest to all physicians and county medical societies of California.

A flood of malpractice suits in San Francisco, seemingly arising from nowhere but nevertheless a fact, probably furnished the substratum of thought, and led the society to lay down disciplinary rules which would properly penalize members who do not live up to those recognized ethical principles, the adherence to which is implied when county medical society membership is granted to physicians.

Just why the physicians and surgeons of San Francisco should have had inflicted upon them an overplus of malpractice suits is not known. A surplus of a peculiar type of legal practitioners and of loose-tongued doctors were possible factors in the conditions that came into being, and which it became necessary to consider if the practice of medicine was not to be totally robbed of its real rewards. The medical schools of the

---

* Editorials on subjects of scientific and clinical interest, contributed by members of the California Medical Association, are printed in the Editorial Comments column, which follows.

University of California and Stanford are both located in San Francisco, and their beneficent influence in creating high standards of practice have long been known to California physicians. When, therefore, more than an average number of well-known physicians of the Bay Region were subjected to malpractice suits, it was necessary to take stock, and also to attempt to analyze the why's and the wherefore's of such unusual and uncalled for legal actions.

As a result of that study, the Committee on Professional Conduct of the San Francisco County Medical Society was brought into existence. CALIFORNIA AND WESTERN MEDICINE suggests that component county societies facing similar problems may find it advantageous to acquaint themselves with the San Francisco plan. The San Francisco method puts teeth into the Principles of Professional Conduct and should have a deterrent influence on members of the medical profession, who, knowingly or otherwise, give support to certain types of attorneys of a class that may be said to be typified by the group known as "ambulance chasers."

* * *

Discussion of the Committee's Work in the Bulletin.—In the July *Bulletin of the San Francisco County Medical Society,* Dr. Russell F. Rypins discusses the work of this new committee; and for the information of the members of other county societies of California the excerpts given below are submitted. The justice of the comments therein made should strike a responsive chord in the hearts of all physicians who love and respect their profession, and the service it renders the lay public:

"The Committee on Professional Conduct is a new venture on this Coast in the serious problem of self-discipline of the medical profession. Its work is looked upon with divergent attitudes. Some physicians regard its activities as inimical to their professional freedom and as a possible source of trouble that would not arise in the absence of such a committee. Most of the thoughtful members of the Society are strongly in favor of the work the committee is assigned to do. . . .

. . . "It is of importance to know that the activities of the committee are regarded as confidential procedures in all cases (except when appeal is requested by some party to its arbitrations), thoroughly to guard members and others from any annoyance or humiliation which might arise from publicity or gossip in some of its cases.

"San Francisco physicians are in a precarious situation in the matter of malpractice insurance protection. Our city is cited as the high spot in the country for lawsuit losses by the carriers of this form of insurance. To assure ourselves of further protection it is imperative that there be a rapid decrease in malpractice claims and suits. Two definite elements are at play causing them. One is looseness of tongue of physicians regarding the work of other physicians which gives origin in the patient's mind to suspicion, resentment or the suggestion that here is an easy racket to 'shake him down' for a considerable sum of money. Ideas of this nature readily snowball into large proportions, especially when a lawyer of doubtful integrity foresees a sizable contingency fee in prospect. But let it be distinctly understood that no muzzling of medical men is intended. The by-laws and the committee do, however, distinctly point out that disparaging speech concerning the conduct, opinions, and treatment of another member of the profession shall not be indulged in with impunity until and unless he has made himself impartially familiar with the facts and circumstances obtaining at the time cited in such criticism.

"The second element conducing to our high 'mortality' is the ease with which some physicians can be paid to give unsound but convincing testimony against a colleague in a malpractice suit. To counteract this it is stipulated that physicians shall now notify the committee of intention to assist in a case before they do so, and shall give their reasons for so intending. Again it must be clearly understood that the by-laws and the committee are not to muzzle any person in such matters. They 'shall respect the privilege of every member to testify in any case as his conscience and opinion may dictate . . . and shall act in all matters with due regard to the rights of the patient.'" . . .

EIGHTY-FOURTH ANNUAL SESSION, A. M. A.—SOME HOUSE OF DELEGATES PROCEEDINGS

The Milwaukee Session.—On June 12-16, was held the eighty-fourth session of the American Medical Association, and the proceedings of its House of Delegates were printed in the issues of *The Journal of the American Medical Association* for June 24 and July 1.

When the large amount of business which was presented to the House is surveyed, the wonder is, how could the American Medical Association have done its work properly before there was a House of Delegates. For, until the reorganization of the American Medical Association some thirty years ago, there was no provision for a House of Delegates, and when Dr. George H. Simmons, editor and general manager emeritus, was called upon for remarks he drew attention to the fact that he had been present at the birth of the House more than a quarter of a century ago. In this year's House of Delegates there were four members who had also been delegates at the initial meeting.

The reorganization plan of the American Medical Association of that time, by making provision for the transaction of business through a representative body to be known as the House of Delegates, has produced excellent results in the last thirty years, and it may truthfully be said that today's firmer financial and improved administrative organization of our national medical body had its real foundation in this instituting of a House of Delegates. So apparent were the advantages of that plan of business organization that all of the constituent state associations have adopted similar set-ups, and with equally beneficial results to their respective bodies.

The American Medical Association House of Delegates with its represenatives from the scientific sections and constituent state associations is a very important body, having in its membership men who have special and broad knowledge of the needs of scientific and organized medicine. The five thousand members of the California Medical Association are represented by seven delegates in the American Medical Association House. It is in the House of Delegates that the policies of the national organization, and to a lesser extent those of its constituent state medical associations, are formulated. The proceedings of the American Medical Association House at each year's annual session are, therefore, of interest and importance. On that account it may be in order to quote from different portions of the proceedings of the recent Milwaukee House, in order to acquaint California Medical Association members with items of business which have special interest for California physicians, and some quotations are here made.

* * *

The Speaker of the House, Dr. F. C. Warnshuis, when he called the first meeting of the House to order, stated among other things:

. . . "There is need for keen appraising judgment. The greatest acumen must be subpoenaed in order that your final acts will well meet up to the demands of the times and continue to maintain the present high standards, functions and leadership of the Association. Emotionalism must not supplant judgment. The needs of the hour must not warp our vision or duty to the future." . . .

* * *

From the address of President Edward H. Cary, who relinquishes his office at the end of this year's session, these paragraphs may be stimulating:

"May I call your attention to a few of the outstanding policies carried to a successful issue:

"First, the contention of our profession that the American physician should have the right to use his own judgment in prescribing alcoholic liquors. . . .

"Second, the contention of the profession that a federal law which affects the practice of medicine is undesirable when it is directed by a bureau under lay control from the seat of the national government; for example, the Sheppard-Towner Act. All activities of this character, regardless of their humanitarian purposes, should be the result of the combined influence of the profession and interested citizens who advocate such services in their own states.

"Third, we recognize that the narcotic question is international in aspect and will require further international agreement before it can be controlled. Narcotic legislation has received most careful consideration, and an enlightened policy has been followed. The Uniform States Narcotic Act had its origin from the work of one of your committees, created in 1919.

"Of course, much work has been done in conferences with other groups. . . .

"Fourth, your legislative committee has labored earnestly to meet the issue raised by the ever-growing service to the veterans which is the result of legislation in their interest. The question of hospitalization has been a serious one and, though there has been no desire to prevent the most liberal care on the part of the government for the service-connected disabilities due to the war, we have strenuously objected to the liberalization of laws which permit the man who is able to pay for medical service to enter veterans' hospitals for free medical care. We have objected to more hospitals being built unless they are needed to care for those suffering with tuberculosis or with mental and nervous disorders, or unless they are needed as old soldiers' homes.

"We must not lose sight of the fact that the present program is also the result of a depleted treasury and, if the economic situation of the country should improve before the present policy is well established, the demands of the veterans having nonservice-connected disabilities may reëstablish abuses of governmental aid to which we have objected. Hence, it is necessary for members of our profession to continue their opposition; otherwise we shall be confronted with the same situation as it existed before Congress gave its support to the request of the courageous President of our country.

"Fifth, the Report of the Committee on the Costs of Medical Care has stimulated the interest of the public and of the profession.

"The Minority Report of this committee has been supported by the members of your official family and, though both the Majority and Minority reports have been given wide circulation and thoroughly discussed, we feel that the great majority of the members of the medical profession throughout this country is supporting the Minority Report, both as to principles enunciated and as to the expediency of not determining a far-reaching policy affecting the medical profession at a time when the economic status of this country is abnormally low and likely to improve."

. . . "The Relation of the Private Physician to the Health Department. . . . Organized medicine has come thus far because of its devotion to education used in its broadest sense. It has directed the forces which have made possible the educational enterprises which give to the service of the people the highly trained medical men of our time. Organized medicine has at the same time, through its machinery, given support, aid and comfort to campaigns which might advance the health forces of the nation." . . .

* * *

President-Elect Dean Lewis spoke in somewhat similar vein to Retiring President Cary; and from his address the following excerpts are taken:

"One of the main problems which had a decided effect on the profession was the extensive hospitalization program which the government embarked on immediately following the war. The legislation that was passed is of such recent date that it is not necessary to review it. Nonservice-connected disabilities entered largely into the program, so that finally almost 70 per cent of the cases that were hospitalized presented disabilities which had nothing to do with the service and did not even have a presumptive connection. Ochronosis, acidosis, gout, and obesity were even on the list of diseases and were applied in the rating of disabilities. In the economy program that has been attempted, nonservice-connected disabilities were excluded. Recent happenings indicate that much pressure has been brought to bear and that hospitalization of nonservice-connected disabilities may again be attempted. If the bars are let down there will gradually be an increase in the amount of hospitalization and a return to the conditions which existed before the attempt to economize was made.

"There is no argument as to the responsibility of the government in the care of the service-connected disability, nor as to the responsibility of the government to the widows and orphans of those who were sacrificed in battle. But any man discharged from the army who is able to make his living has no lien on the government. This is generally admitted. It is much more difficult to rescind legislation than it is to prevent its passage. The medical profession must still make untiring and unceasing effort to prevent the hospitalization of nonservice-connected disabilities. If such continues, the foundation of medicine and the future of medicine are threatened. Hospitals already built for the care of the civilians in different parts of the country cannot carry the financial load long. I realize that not infrequently the medical profession has a bad press and that they are regarded as selfish. Any suggestions which they may make are suspected of being based on some ulterior motive. The history and traditions of the profession refute such statements. Continued effort should be maintained to prevent a return to the system which prevailed before the economy act was considered. Personal contact with legislators is about the only method we have to prevent the continuation of a scheme which will bankrupt a government, and, if bankrupt, even the nonservice-connected disability will have nothing. We will all be in the same boat, which is disabled and tossed about."

* * *

. . . "The different reports which have been made from time to time relating to medical care have been discussed so frequently that it is doubtful whether anything should be said about them. We all know that there are defects in medical practice.". . .

* * *

. . . "The losses which hospitals have suffered led them to accept different schemes, which they will be glad to cast off when the depression is over. You will hear that it has been found after a careful survey that there are more than thirty schemes which have been proposed to provide for the periodic prepayment purchase of hospital care. Some of these schemes are revolutionary in character. They are proposed and backed by propagandists and promoters who are looking for a profit. Beware of the promoters who are robed in the pure white of charity. No consideration is given to the relation between patient and physician. They have not confined their effort to the low income groups, and no attempt has been made to exclude from their scheme the final inclusive medical service with hospital care. In fact, in some of these schemes it is frankly stated that such is the ultimate aim.". . .

* * *

. . . "One of the founders of a foundation which gave financial support to the Committee on the Costs of Medical Care has recently made the statement that voluntary insurance is not successful and that compulsory insurance should be put in effect as soon as possible and that this type of insurance should be placed for consideration before the federal authorities.

"Judging by the performance of the business world during the past two years, I should say that the medical profession has shown more ability to take care of its own business than any other profession. Physicians make mistakes, but their practice has been on a high plane and will continue on this plane if coöperation is practiced instead of competition, and if bidding for practice does not replace the system which has been in vogue since the beginning of practice.". . .

* * *

. . . "The medical profession should take an active interest in hospitalization. Hospital planning should be undertaken. A city or town of 15,000 people should not have three hospitals. One good hospital could take care of the needs of such a community. Better have one hospital that is full and active than three partially filled. The partially filled hospital has an enormous overhead. Always expecting to be filled, it keeps a large civilian staff always expecting that it will suddenly be called on to work overtime.

"Hospital construction has run riot. Many hospitals are built as memorials, and some are built to tickle the vanity of hospital architects. This point has been emphasized so much that I need say nothing. One of the many increases in the cost of medical care has been hospitalization.". . .

* * *

. . . "When medical education was passing through such revolutionary changes a few years ago, state licensing boards formulated some stringent and restrictive rules which many of the poor schools could not meet and they were forced to close. With the improvements that have occurred in medical education, many of the requirements might be rescinded.". . .

* * *

. . . "There are certain imponderables which determine one's ability to practice and these are not based on studies, schemes, curricula or time schedules."

The Committee of Legislative Activities gave a somewhat particular account of its work at Washington during the second session of the Seventy-Second Congress, as may be gleaned from the following details:

. . . "To conclude the discussion on veterans' affairs, it is our opinion that the American Medical Association should support the President of the United States in his exercise of the authority that has been conferred on him. The Congress has granted him authority to determine the nation's policy in regard to veterans. He has acted courageously, according to his best judgment. If events prove that he has made an error of judgment, he will, we believe, promptly correct that error on his own initiative. Your committee deplores the attempts that have been and are being made to deprive the President of the authority that has been granted to him.

"We believe that it is the duty of the government to provide medical and hospital service at government expense for the relief and cure of such disabilities of veterans as are of service origin. This service could be rendered in government hospitals and homes, or elsewhere, in whatever manner is of the greatest benefit to the disabled veterans. The President has promised such care to veterans of this class. We believe further . . ."

* * *

. . ."Finally, may we call attention to another matter that is, we believe, of vital interest to the public and the medical profession: that is, the corporate practice of medicine. The courts in a number of states have held that the corporate practice of medicine is unlawful. If this can be legally established throughout the country, it will do a great deal now and in the future to protect the public and the medical profession from exploitation.". . .

* * *

To the Reference Committee on Hygiene and Public Health was referred a resolution which, as adopted, is as follows:

"Whereas, Radio broadcasting is under the control of the Federal Radio Commission; and

"Whereas, There appear to be no apparent restrictions of the advertising statements and claims that are being broadcasted; and

"Whereas, It appears that the radio is being employed to broadcast unsupportable claims and statements related to a large number of alleged preparations for the cure of many ailments and diseases, thereby misleading the public; therefore be it

"*Resolved,* That the Board of Trustees, through the Bureau of Investigation, and through such other national organizations as the board may be able to enlist, initiate and pursue activities and efforts to terminate misleading and misrepresenting radio broadcasting that is related to medicinal remedies and preparations for the conservation and protection of the health interests of the public."

* * *

The Reference Committee on Medical Education discussed in some detail a few of the problems confronting undergraduate and graduate teaching, and two paragraphs are here reprinted:

. . . "It is recommended that the handbook entitled 'Hospital Practice for Interns,' listed as one of the publications of the Council, be adopted by the hospitals on the approved list and that such institutions place copies at the disposal of the interns.

"The Council is to be commended for its initiative in securing adoption by the Federation of State Medical Boards of the United States of the resolutions pertaining to the matriculation of American students in European schools and to the admission of American graduates of such schools to state medical licensing examinations, to the end that migration of less desirable students might be in a measure restrained." . . .

* * *

The Reference Committee on Medical Economics, as might have been expected, was given a very considerable amount of work; and the following excerpts should be of interest to members of the California Medical Association, because these same subjects have been discussed by our own California Medical Association Department of Public Relations:

"Your committee appreciates the special consideration that has been given to contract practice and agrees that this type of medical work is constantly changing. It recommends that the study of contract practice be continued, and the action of county societies in dealing with these problems be based on the recommendations of the Judicial Council:

" 'By the term "contract practice," as applied to medicine, is meant the carrying out of an agreement between a physician or a group of physicians as principals or agents and a corporation, organization or individual, to furnish partial or full medical services to a group or class of individuals for a definite sum or for a fixed rate per capita.

" 'Contract practice *per se* is not unethical. However, certain features or conditions if present make a contract unethical, among which are: (1) When there is a solicitation of patients, directly or indirectly. (2) When there is underbidding to secure contracts. (3) When the compensation is inadequate to assure good medical service. (4) When there is interference with reasonable competition in a community. (5) When free choice of a physician is prevented. (6) When the conditions of his employment make it impossible to render adequate service to his patients. (7) When the contract, because of any of its provisions or practical results, is contrary to sound public policy.

" 'Each contract should be considered on its own merits and in the light of surrounding conditions. Judgment should not be obscured by immediate, temporary or local results. The decision as to its ethical or unethical nature must be based on the ultimate effect, for good or ill, on the people as a whole.'

"Group hospitalization has been described and criticized in several issues of The Journal. Certain phases of some plans may have merit. The committee believes many contain features which are subversive to the best interest of the public, the medical profession and the hospital, and it condemns any plan which incorporates principles contrary to the remarks on contract practice. The committee recommends that the investigation of group hospitalization be continued and that the results of the studies be published in the Medical Economics department of The Journal."

. . . "Group practice has received widespread attention. The articles in The Journal have been comprehensive in scope and the facts presented well correlated and so authentic that they should form the basis for any consideration of the problem and be read by all members of the Association. Those forming a group should be guided by the same principles regarding professional qualifications for practice, ethical relations to fellow practitioners, and consideration for the economic position of those whom they serve as should guide the individual practitioner."

* * *

The election of officers of the American Medical Association resulted in the selection of the following national officials:

President, Dr. Walter L. Bierring, Des Moines.

Vice-President, Dr. John H. Musser, New Orleans.

Secretary, Dr. Olin West, Chicago.

Treasurer, Dr. Herman L. Kretschmer, Chicago.

Speaker of the House, Dr. F. C. Warnshuis, Grand Rapids.

Vice-Speaker of the House, Dr. N. B. Van Etten, New York.

Trustees: Dr. Austin A. Hayden, Chicago; Dr. C. B. Wright, Minneapolis.

* * *

The California Medical Association delegates who registered as members of the American Medical Association House were Doctors Fred B. Clarke, C. A. Dukes, Lyell C. Kinney, William R. Molony, Edward M. Pallette, and John Hunt Shepard.

These representatives from California were appointed to important committees and rendered efficient aid in the work of the House.

EDITORIAL COMMENT*

POSTOPERATIVE DISTENTION

The proverb that "an ounce of prevention is worth a pound of cure" is never so well exemplified as in the problem of postoperative distention. Numerous articles have been written regarding the cause, prevention and treatment, but a point that has not been stressed sufficiently is the dependence of intestinal distention upon abnormal body chemistry. Following operations, in a great number of patients there appears in the urine acetone and diacetic acid; to a lesser extent it is true, if adequate preliminary carbohydrate feedings have been carried out. This acidosis appears within twenty-four hours after an operation, at a time when it is not feasible to administer carbohydrates or glucose by mouth. It is during this time that intravenous glucose therapy is particularly advantageous. It is suggested it be made a postoperative routine in major surgical cases to test the urine for acetone and diacetic acid, and that glucose be administered if the acidosis is present. It is a striking fact that if glucose be administered to a patient with a distended intestine, cramps are felt immediately and some gas may be passed. Distention appears to be due to lack of sugar in the smooth muscle of the intestine, and distention takes place irrespective of how much manipulation has occurred during the operation.

Fitzhugh Building.

Alanson Weeks
G. D. Delprat
San Francisco.

---

* This department of California and Western Medicine presents editorial comment by contributing members on items of medical progress, science and practice, and on topics from recent medical books or journals. An invitation is extended to all members of the California and Nevada Medical Associations to submit brief editorial discussions suitable for publication in this department. No presentation should be over five hundred words in length.

THE KRUEGER PERTUSSIS ANTIGEN

VII[†]

Up to within the last five years it was intuitively assumed that pathogenic micro-organisms possess the same degree of racial stability as that shown by higher animals and plants. A qualitatively different "mucous membrane phase," "septicemic phase," and "test-tube phase" of the same micro-organism were inconceivable. In contrast with this historical point of view, the new theory of bacterial pleomorphism assumes the existence of such "antigenic variants." Some of the test-tube "phases" of *B. typhosus,* for example, are known to be so different in their effective antigenicities as to resemble wholly unrelated bacterial species.

To prepare logical nonviable specific vaccines, therefore, the new pleomorphism insists that fully virulent pathogenic micro-organisms must be used, that they must be isolated directly from human cases without passage through lower animals and grown exclusively on normal human tissue products, or on nonspecific media enriched with undenatured human specificities. Finally, the resultant bacterial growth must be killed without the denaturing effects of heat, x-ray, bacteriophage, or chemical antiseptics.

An approximation to this theoretical ideal has been developed by Doctor Kreuger of the Department of Bacteriology, University of California, for the pertussis vaccine, whose clinical efficiency is currently endorsed by Doctors Stallings and his colleagues[1] of the Department of Pediatrics, University of California. The Krueger strain of the pertussis bacillus was isolated from the present California epidemic, and was grown exclusively on human-blood-enriched culture medium. The resultant growth was harvested in buffered Locke's solution, was freed from metabolites by centrifugation, and killed by mechanical disruption in a special ball-mill designed for this purpose.[2] Since the Chamberland and Berkefeldt filters were found to alter the antigenic properties of the resultant colloids, the disrupted antigen was freed from the few remaining intact bacteria by passage through a specially calibrated colloidal filter. A water-clear sterile filtrate was obtained.

Thus far the Kreuger antigen has been used in over two hundred reported cases in Fresno and the Bay region. Comparison has been made with 62 untreated cases, and with 129 cases treated with ordinary commercial pertussis vaccine. In judging the relative effects of the two vaccines, the following criteria were adopted: "When severe symptoms, such as hard paroxysmal coughing, whooping, and vomiting subsided within a week after beginning the vaccine therapy, the results were considered excellent; within two weeks, good; within three weeks, fair; three weeks or more, poor." In the untreated group the symptoms usually persisted for from six to twelve weeks. In the group treated with commercial vaccine, but 47 per cent gave evidence of positive therapeutic effects. In the two hundred reported cases treated with the Kreuger antigen, 62 per cent were classified as excellent results; 25 per cent, good; 6 per cent, fair. In only 7 per cent were the results negative, as contrasted with 53 per cent negative results with the commercial vaccine.

Since the Kreuger vaccine was prepared from a strictly local epidemic, its proponents do not predict that it will be equally as effective in other localities or in other California outbreaks. Moreover, the keeping power of the Krueger antigen is as yet undetermined.

Stanford University.

W. H. Manwaring,
Palo Alto.

THEOBROMIN REËNFORCEMENT OF DIGITALIS ACTION [*]

The therapeutics of abnormal cardiac conditions is limited, and any suggestion likely to extend its boundaries is welcome. In recent years, coronary disturbances have received the greatest amount of attention in the field of cardiology. This has led to a search for coronary dilators, with a correspondingly increased study of the xanthin group of drugs. Experimental studies in general show this group to have an appreciable coronary dilator action, which is particularly evident when theobromin and theophyllin and their derivatives are used. This action is stronger in the case of theophyllin, but is not inappreciable in the case of the cheaper and more readily procured theobromin. If there is anything in the deficient-circulation theory of the pain occurring in angina pectoris, and in coronary sclerosis and thrombosis (and there certainly seems to be), the astonishing results obtained in the relief of this pain by the use of the drugs mentioned surely confirm the experimental results.

Because of this action in increasing the coronary blood flow, some physicians use these substances prophylactically to retard, if possible, the final breakdown of the heart. Continuous administration, even in the absence of symptoms, in coronary and in simple senile heart cases, by maintaining a constantly increased supply of blood to the myocardium retards, at least theoretically, the changes due to age, the inevitable fibrosis, and serves to strengthen whatever muscle fiber may still be present. And I may say that clinical results do seem to bear out this theoretical reasoning.

However, the point I desire to make is this: If we wish to concentrate a drug in a certain part of the body, or, in other words, if we wish to give a drug a greater chance to exert its effects on a part, it does seem logical that by determining a greater flow of blood to that part, when it is possible, we shall attain the end desired. The most commonly used drug in cardiotherapy by far is digitalis; but in many cases in which its action would seem to be desirable, digitalis seems to be without effect. I refer principally to those cases of cardiac fibrosis, now labeled senile heart disease and previously called chronic myocarditis. In many such cases, when digitalis alone is entirely without effect its administration together with, or preceded for one or two weeks by theobromin sodium salicylate in the dosage of five grains (0.3 gram) after meals and at bedtime, is quickly effective. The theobromin salt alone will in many cases relieve the dyspnea present in this condition.

[†] Part I of this series was printed in the February California and Western Medicine, page 116; Part II in March, page 188; Part III in April, page 275; Part IV in May, page 380; Part V in June, page 447; Part VI in July, page 59.

[1] Stallings, M., Frawley, J. M., Kreuger, A. P., Smyth, F. S., and Nichols, V. C.: Preliminary Clinical Report on a New Pertussis Antigen. Read at the annual meetings of the Society for Pediatric Research, New York, N. Y., May 6, 1933. (To be published.)

[2] Kreuger, A. P.: Jour. Infect. Dis., 52 (in press), 1933.

[*] Since the above was written, I have found that many patients who cannot tolerate the theobromin immediately after meals have no trouble at all if it is taken from one to two hours later.

A rather striking example was a case of rheumatic heart disease with a chronic, nonprogressive, mitral endocarditis, and chronic auricular fibrillation. Digitalis was without effect, although persisted in for some time and in varying dosage; standardized tablets of one grain of leaf being used. The patient complained constantly of a feeling of fatigue. Immediately upon the administration of theobromin coincidentally with the digitalis, the patient felt better, and the fibrillation showed great improvement—that is, a marked slowing to practically a normal rate; the fibrillation, however, persisted at this lower ventricular rate. This may have been merely a coincidence, but the theobromin effects observed in other cases led me to think otherwise.

Recently, it has been reported [1] that digitalis is more toxic at high altitudes; and Leake,[2] citing this report, remarks that "it remains to be determined whether or not acclimatization may alter the tendency indicated." It seems to me that this is consistent with what has already been said. To bring to the heart a greater portion of the digitalis administered, it is necessary either to slow the coronary circulation so that the digitalis present in the blood may be more thoroughly taken up, or to increase the amount of blood passing through these vessels. Decrease in the rate of the coronary blood flow occurs with slowing of the heart, while increase is effected with an increased heart rate. On removal to a high altitude, one of the adaptive responses of the body is an increased heart rate, one of the conditions causing a more rapid coronary flow. Whether the increase in red cells occurring at high altitudes plays any rôle in the increased toxicity of digitalis cannot be said. The part played by the blood cells in the action of drugs is unknown; as these cells have selective affinities for certain substances carried in the blood, it should be assumed that they may have some importance in drug action. It should not be assumed that the blood plasma alone carries these substances. If what has been said is correct, then it is only fair to assume that digitalis becomes less toxic with acclimatization in such cases. This work would appear to bear out the main thesis of this paper.

At any rate, I consider the use of theobromin as mentioned to be worth while, keeping it in mind for digitalis-resistant cases. In those cases in which theobromin sodium salicylate causes gastric irritation, the sodium acetate salt may be used. So far (and I have used it for long periods in a great many cases) I have had very little trouble with the sodium salicylate preparation given in the doses suggested. This may be due to the fact that it is taken after food, when possible, and that at least half a tumblerful of water is taken with each capsule.

746 Francisco Street.

Louis Baltimore,
Los Angeles.

---

[1] Lehman, A. J., and Hanzlik, P. J.: Proc. Soc. Exper. Biol. and Med., 30:140-143 (November), 1932.

[2] Leake, C. D.: Calif. and West. Med., 38:188 (March), 1933.

Treatment of Syphilis with Hyperpyrexia.—Epstein and Paul treated a group of twenty-eight patients with various forms of syphilis of the central nervous system by means of hyperpyrexia produced by diathermy. They used a diathermy apparatus capable of elevating the body temperature to 41.1 centigrade (106 Fahrenheit). They employed, with some modifications, the technique of Neymann and Osborne. Striking improvement was noted in thirteen patients with tabes dorsalis. The relief of pain was an outstanding feature. Improvement was noted in patients with other types of syphilis of the central nervous system, but this was not as marked as in the tabetic group. Serologic changes did not parallel the clinical improvement. One fatality occurred early in this work. The patient was a man, age sixty-seven, with an extremely demented type of dementia paralytica. He was obviously a poor physical risk, but because of the rapid progress of his dementia his private physician felt the risk justifiable. Death followed the first treatment. His temperature rose to more than 106.8 degrees Fahrenheit.—*American Journal of Syphilology.*

Medical Overcrowding.—Regarding specialists' training, I have a feeling that we are past the period of the six weeks' specialist, and that the young men nowadays who go into specialties make up their minds beforehand to a long period of training. There are certain important things that Doctor Gregg left out. The first is that there is a tendency to a definite overcrowding of the medical profession, and I think the meeting of that emergency is the greatest problem now before medical educators. One cannot sit in a dean's chair and notice the struggle of young men to get located, compared with twenty years ago, and not be struck with the fact. I have thought, "How can it be settled under our American conditions?" and I must say my mind is very hazy; but I feel that the basic movement must come from the medical profession represented by the American Medical Association and from the medical educators as represented by this body and the Association of American Medical Colleges. I feel that the most drastic steps should be taken to meet it. And I favor such drastic steps on the sociological argument that it is bad for the people. Anything that tends to overproduction in the medical profession tends to the outcropping of all that is bad in medicine. At present the medical profession is a high-minded, honest and reliable profession, taken as a whole, but in its midst there are always some shysters, some quacks, some abortionists, some men who have not been impregnated with the ethics of the profession. When the exhibitions of competition become more drastic, I am certain that every one of those tendencies in the wrong direction will be exaggerated. As a protection for the whole people and not for the medical profession alone, I strongly advocate that we get right at this job to find out where we are standing.—Discussion by Dean E. P. Lyon of Minneapolis at the twenty-ninth meeting of the Congress on Medical Education, Chicago.

C. M. A. DEPARTMENT OF PUBLIC RELATIONS

An open forum for progress notes on the department's activities, and for brief discussions on medical economics. Correspondence and suggestions invited. Address Walter M. Dickie, Room 2039, Four Fifty Sutter Street, San Francisco. This column is conducted by the Director of the Department.

Current Trends in Medical Practice*

By R. G. Leland, M. D.
Chicago, Illinois

Of recent years the subject of economics has been given increasingly greater attention by the medical profession. At one time it was impossible for physicians in some parts of the country to arrange meetings for the purpose of discussing medical economics; it was considered unethical to discuss such matters. Times have changed, and at present there is some danger that economic questions may be influenced by emotion rather than by careful thinking. Not more than a half century ago medicine was practiced largely by the use of the five senses, plus whatever instruments or medicaments the physician could carry in his handbag. A suitable history and a careful physical examination were considered all that was essential in making a medical diagnosis. The temperature was taken by placing the hand on different parts of the body. Fifty years ago, and perhaps even more recently, the sense of smell was used extensively to determine the presence of exanthemata.

The next change in medical practice was a definite shift from the five senses to the various kinds of laboratory technique. As the laboratory period became established all of the cells, tissues, secretions and excretions of the human body were subjected to laboratory examination or microscopic study. The next development to assist diagnosis and treatment was the x-ray, which opened to human observation the hidden cavities of the body. Before that time physicians could listen to the râles within the chest, but with the advent of the x-ray they could see the pathology which was responsible for the râles. As the various perfections of roentgenology were marshaled into the practice of medicine, and as the numerous processes of laboratory technique were developed, the five senses of the earlier practitioners were not only magnified but they were extended, and they were increased a thousandfold, so that it became easy to make a diagnosis, and diagnoses were perhaps in some instances much more accurate.

As a result of these scientific advances knowledge accumulated so rapidly and in such vast amounts that it became impossible for any single physician to know and apply all these refinements in his private practice. We find the general practitioners of earlier times becoming the specialists of today. The first specialists were developed in the field of eye, ear, nose, and throat. In 1925 there were approximately 15,000 specialists of all kinds; in 1928 there were 18,000; and in 1930 there were 40,000. In 1915, 30 per cent of all graduates were becoming specialists; in 1920, 51 per cent of all graduates were limiting themselves to specialities; today three-fourths of all the students in medical schools decide some time during their junior or senior years the specialty they are to practice when they become licensed.

When roentgenology and certain of the newer methods of diagnosis were developing, the equipment for such work was very cumbersome and very costly. It was then necessary that patients be taken to the equipment, in order that the benefit of these newer methods might be secured. Now such equipment is greatly improved and much of it is easily portable so that it can be taken to the home or sickroom. The former practice has thus been reversed.

From 1900 to 1930 there was an increase in hospitals from more than 1,000 in 1900 to more than 7,000 in 1930. In 1900 there were 421,000 hospital beds; in 1930 there were 950,000 hospital beds. In 1920 there were 3,000 clinical and x-ray laboratories for the purpose of reducing the stay in the hospitals; in 1930 they had increased that to 4,000. In 1920 there were 2,500 x-ray laboratories connected with hospitals; in 1930 there were 5,000 x-ray departments in hospitals. A few years ago 90 per cent of all cases of disease were treated by the general practitioner. Fifty-five per cent of these were treated in the home; 35 per cent in the physician's office, and only 10 per cent were treated in the hospital. Now, more than 100,000 physicians in the United States have some kind of hospital connection or affiliation. It is believed that 90 per cent of all cases of disease can still be treated by the general practitioner with the amount of equipment that he can carry in his handbag; but the remaining 10 per cent require all of the newer methods and refinements of diagnosis and therapeutics, and all of the skill that the modern physician can bring to bear upon the case.

During the period of less than half a century the practice of medicine has changed from an individual, independent, general practice, chiefly, to a practice in which the specialist is rapidly becoming, if he is not already, the dominant figure or limited practitioner.

Much has been said and written in recent years concerning the quality of medical care received by the various classes of the population. The population has been divided, perhaps arbitrarily, according to income, namely, the rich, the poor, and the so-called middle class. It is claimed that the rich receive the best of medical care and that the large class of working people, whose income is small, find it extremely difficult to get the type and quantity of medical care which they deserve and need. Although we must admit that good medical care is essential to happiness, and should be available for what the individual can afford to pay, it is necessary to make a distinction between good medical care, or that which is necessary and appropriate for the particular case, and the best medical care. The best medical care may never be available to all the population at all times for the amount they can afford to pay. It must be admitted that it is not always necessary to apply all of the methods of diagnosis and treatment to a particular case. It seems, then, that we should rather strive toward that time when all of the people will receive the best care that can be furnished for the amount they can afford to pay. Perhaps this can best be illustrated by the cost of railroad transportation. One can buy a railroad ticket that will take him from New York to San Francisco safely, the thing which he expects it to do. If he buys a coach ticket, it will be necessary for him to sit up all the way. With a little more money he can buy a tourist ticket, which will give him more comfortable accommodations. For still more money he can buy a Pullman ticket that will provide a berth in which to sleep. Or if he wishes to pay the price he can buy a compartment or a drawing-room. If he desires to get to his destination more quickly and is able to pay the fare, he may travel by air transportation. Any one of these means will take him from New York to San Francisco safely, but for increasing degrees of comfort or luxury and saving of time he must invest more money.

---

* From the office of the Bureau of Medical Economics, American Medical Association. Reprinted from the Journal of the Indiana State Medical Association, June 1, 1933.

There have been many experiments during the last few years in methods of administering medical care. Many communities are now supporting some forms of medical practice which are recognized by those competent to judge as unsatisfactory, inadequate, and not economically sound. For example, there are: lodge practice, mutual benevolent associations, insurance schemes of various kinds (although they are not always labeled as insurance schemes), and flat rate monthly schemes for medical care that have been developed by newspapers, by medical groups, by county medical societies, by individual physicians, and others.

The practice of medicine represents a division of labor in the general economic system. It has for its object the protection of public health. Although it has become a fairly distinct entity as compared with other members of the economic order, it always has been more or less influenced by those factors which influence all branches of general economics. It has been charged that the medical profession should perfect some method by which the people of the country can secure at all times adequate medical service regardless of their ability to pay. To make such a charge is both unfair and unreasonable. The medical profession of the United States consists of about 15/10000 of the entire population. The medical profession has practically no controlling influence over employment, industry, marketing, business, banking, the value of foreign credits and other general economic factors, all of which influence the degree to which the population in general has the ability to buy medical service.

Medical practice, as the general economic trends change, will undoubtedly undergo some change, but it is necessary for county medical societies to decide whether a change in medical practice is necessary in their respective communities. Change, for the sole reason of practicing medicine in a different way, is never worthy.

The type of medical practice which is to evolve from the present situation lies very largely, if not entirely, in the hands of the medical profession. It is not enough for medical men to read articles, to go to organization meetings and hear talks and then to return to their homes and say and do nothing more about it. The future of medicine lies within the hands of every physician. It is not alone the responsibility of the American Medical Association; it is not alone the responsibility of the officers of your State Association; it is not alone the responsibility of your county organizations. It is the responsibility of every member of organized medicine to know the trends in medicine today, to know tendencies toward contract practice, toward health insurance, and toward every other method which has for its object the exploitation of both the public and the profession for the profit of lay promoters and lay organizations.

In times of economic stress there is always a demand for change. Whether this demand is made of the medical profession or of other members of the economic order the question should always be asked whether the change that is demanded will bring to the organization or to the public advantages that are greater than those which the change supplants.

Before accepting any of the new systems of medical practice a careful examination of the schemes is necessary. Are these new systems of medical practice better for the public and the individual than the type of medicine which is being practiced today? Is the medical profession, in accepting a change, lowering its standards of quality of care? Are the proposed changes based primarily upon financial or economic distress, or are they based upon better service to the sick individual? Will the newer types of medical practice result in a more unified and coherent medical organization, and are these new types of medical practice to be controlled by the medical profession? Unless these questions can be answered satisfactorily for the good of the public, the profession is not justified in endorsing or entering upon any particular new plan.

The hope of solving the present problem of medical care lies, first, in carefully planned and exhaustive studies, conducted without prejudice and without preconceived ideas or bias of any kind. It is necessary that every physician participate in this work to some extent. Not until facts are available upon which it can act intelligently is the medical profession justified in admitting that a change in medical practice is necessary.

CANCER COMMISSION*

REPORT OF COMMITTEE ON SKIN AND MOUTH TUMORS

Part I. Keratoses

PREAMBLE

A consideration of cancer of the skin would be somewhat incomplete if it did not also embrace the keratoses. The latent possibilities of these fairly common lesions should be the more emphasized inasmuch as some attach little importance to them. They apparently fail to realize that these lesions, painless, of small significance clinically, and often complained of only because of their unsightliness, may eventually develop into skin cancer in its most serious form. These lesions, not definitely epitheliomatous, yet so often prodromic of cancer as to be considered by some authorities part of the same phenomena, will be considered first.

1. KERATOSIS SENILIS

This condition occurs in individuals of and beyond middle age. It may be found in earlier years in those who are subject to inclement exposure—sailors, railroad men, etc. The areas most commonly involved are the face, ears, neck, and dorsum of the hands. They manifest themselves mainly as flat, slightly elevated, irregularly shaped patches composed of adherent crusts or scales, yellowish brown to dark brown and even blackish in color. The crusts may be greasy, but are usually dry and hard. When removed their undersurfaces often show horny prolongations which fit into the small cavities which remain. Their removal will often be followed by bleeding; if not, the undersurfaces are moist and reddened and bleed easily.

Flat, seborrheic keratoses or warts should readily be differentiated from the above, with which they are sometimes confused. These latter have different clinical features, different distribution (as on the trunk), and do not tend to develop into epitheliomas.

Treatment: Any method resulting in destruction of the lesion is acceptable—freezing with carbon dioxid snow, electrodesiccation, cautery, curetting with cautery of base, etc.

2. LEUKOPLAKIA

This is considered a keratosis of the mucous membrane, a syndrome due to various causes—a modification of the epithelial tissue due to toxic, vascular or artificial irritations. The lips are most frequently involved, but this condition may be found on any part of the surfaces of the oral cavity. In considering leukoplakia it is well to remember the aphorism, "Look backward toward syphilis and forward toward malignancy." It may, with justification, be divided into the mild and the marked forms.

Mild Form.—This is characterized by spots or patches of various size and outline, smooth and bluish white in color. They are not much thickened, but may be very slightly raised, usually sharply marginated, sometimes the borders fading into the normal mucosa. These patches are quite adherent and cannot be peeled off without traumatizing the parts below. Occasionally small particles are desquamated. If situated on the lips, small fragments are usually either bitten off or pulled off by the patient.

---

* The Cancer Commission was brought into being by the House of Delegates of the California Medical Association to aid in the furtherance of all efforts to combat cancer. The roster of officers and the central office of the Commission to which communications may be sent is printed in this issue of CALIFORNIA AND WESTERN MEDICINE (see front cover directory). This column is conducted by the Secretaries of the Commission.

Marked Form.—Usually the same patch will demonstrate varying stages from the above to where the thickening of the mucosa is quite marked. Hard, snow-white thick patches with sometimes roughened, but usually smooth surfaces firmly attached to the underlying tissues may be observed. As they become chronic, crevices may develop; patches may be desquamated out of the mosaic coverings only to be rapidly filled in again. Rarely ulcers and horny protuberances form, both of these conditions usually being the early prelude to epitheliomatous changes. The course of both types is very irregular, usually of definite though slow progress. It may persist through life in stationary form, or it may even subside and disappear; but is prone to recur. Some continental authorities place the frequency of epithelioma in leukoplakia from 30 to 40 per cent, but it must be recognized that mouth hygiene among the old world masses is an undeveloped art, and this may account for the extremely high incidence.

Treatment:

(*a*) Investigate the possibility of syphilis.

(*b*) Strict buccal hygiene (elimination of tobacco, alcohols, condiments, and spiced foods; cleansing and adjustment of all teeth; removal of all local irritants, including metallic fillings or crowns).

(*c*) The use of soothing and weak alkaline mouth washes.

(*d*) Marked form: Freezing, electrodesiccation or cautery are appropriate.

With regard to radiation for obstinate cases of leukoplakia, some difference of opinion was developed. Some members believed it advisable; the majority regarded it as ineffective and likely to be dangerous and to be used only in the presence of malignant change.

3. ULCERS

In general, it may be stated that simple chronic ulcers are not prone to develop into epitheliomas. There are, however, three main exceptions—the ulcers of leukoplakia areas, the ulcers of radiodermatitis, and ulcers in burn scars. All types usually eventuate as squamous cell epitheliomas. Such ulcers should be treated by radical destruction with electrodesiccation, electrocoagulation, or the actual cautery. Scalpel excision is in order if the whole area, including a generous margin of normal skin, can be removed. One member of the committee calls attention to the tendency of epitheliomata in old ulcers to metastasize slowly and to the consequent fact that adequate local excision will often accomplish cure without amputation. Radium should not be used in the treatment of lesions due to radiation necrosis.

4. SCARS

Cicatrices may occasionally become the starting point of cancer, especially the scars of extensive burns or those resulting from injudicious radiation exposure. When such cancers develop they are ordinarily of the squamous cell variety.

Part II. Epitheliomas

PREAMBLE

These result from an atypical proliferation of the epithelial structures of the skin. There are many clinical forms, some relatively benign, some malignant. There are two main types, one consisting of cells of the type seen in the basal layer of the epidermis and known as basal cell epithelioma, the other resembling the squamous layer and known as squamous cell epithelioma. There are many synonyms, but the above terms are adequate for our purpose and will be less misleading. The former type rarely metastasizes and is, comparatively, benign. The latter commonly metastasizes and is, therefore, relatively malignant. By "relatively" we mean that we are of the opinion that while the great preponderance of the squamous cell epitheliomas in their early stages are readily controlled by modern methods of procedure; some few of them, irrespective of how capably treated, tend to recur and metastasize. Although the above definite separation of the two types generally obtains, it sometimes happens that the one type merges with the other, producing what is known as the mixed type. In this variety the histopathologic evidence differs when taken from different parts of the same tumor, different slides showing dominantly the basal cell, squamous cell, or mixed characteristics. This emphasizes the necessity of making sections from different parts of the same tumor. Epitheliomas occur most frequently on the face and hands of elderly persons. Experience has demonstrated that most of those situated on the dorsum of the hands are of the squamous cell type. It was formerly believed that a particular distribution on the face was a fairly definite indication of type, but this assumption has recently been demonstrated to be unwarranted. Clinical types of epithelioma differ widely. The same type has also a variety of forms. Appreciation of these minor differences is gained by experience alone.

Clinically, epitheliomas may be flat and superficial, deep and nodular, papillomatous or fungoid.

Superficial Epithelioma.—This type usually originates in a keratotic thickening of the skin accompanied by redness, the surface beneath the crust then showing as a superficial ulcer which gradually develops the characteristics of an epitheliomatous ulcer; or it may demonstrate itself early as a pin-head to bean-sized, smooth, firm, waxy, translucent nodule, whitish in color, with fine blood vessels ramifying over it. It may remain for years unchanged in this state; there may be but one or several nodules grouped together. These nodules proceed quite slowly to ulceration when fresh nodules are formed, and it is due to this process that so many varying clinical pictures of the same entity may be produced. Crusts form on these ulcers which in turn are desquamated or removed by trauma, disclosing a large ulcer with each successive denuding. Attempts at cicatrization are apparent in most of them. In fact, some cases show a complete scar-like surface, with papules or nodules being found at the border only. These are, in the main, the superficial or basal cell epitheliomas, the slow nonmetastasizing forms.

Deep Epithelioma.—This form may originate in the superficial type or develop independently. In the latter instance it begins as a small firm nodule. It may be rounded or take the form of a plaque with lateral extensions into the surrounding and deeper tissue. These are of firm consistency, having a fairly characteristic feel. The surface is pinkish and usually has fine blood vessels ramifying over it. Ulceration may occur. The base and walls are definitely indurated, the floor usually irregular, and they may show papillomatous or fungoid growths, usually associated with a viscid hemorrhagic or purulent discharge; the edges may be everted or undermined, but in most instances are thickened and indurated. These ulcers extend more rapidly than the former type, both deeply and peripherally, causing at times no small degree of local destruction. If of the squamous cell type there is often involvement of the lymphatic glands with general metastases followed by a fatal termination.

We believe it impossible in many instances to differentiate clinically between the basal and squamous cell types. This in itself warrants biopsy, not only as a guide to scientific diagnosis, but as a means of guidance in therapeutic procedure. The question of the dangers attendant on biopsy is a moot one and is justifiably so, inasmuch as one has little data upon which to base one's opinions. However, the opinion is offered that the danger of dissemination of any vegetative cells within the few minutes necessary to obtain frozen section findings is not great. Ideally, we believe that a biopsy should be done at the time of operation, but in actual practice an immediate frozen section is not demanded. It may be suggested that the best biopsy is an excision of the entire lesion when this can be done without mutilation. If radiation is contemplated for treatment of the lesion, it is recommended that biopsy be done after radiation therapy has been begun. Instead, one may destroy the lesion widely, including a wide margin of normal skin, and send a portion of the growth to the laboratory for classification later. The obvious mode of procedure, in the absence of any histologic data or in the presence of a definite degree of uncertainty, is the radical one. Opinions vary regarding the efficacy of histopathologic grading, and while we believe the method to be of value, we feel there is much to be desired from it even in the hands of experts, and one cannot be condemned for accepting a pathologist's prognosis with a certain degree of trepidation.

EPITHELIOMAS OF THE SKIN

Basal Cell Epitheliomas of the Skin.—The general characteristics of these growths have been mentioned above. They occur most frequently on the faces of elderly persons. Although they do not metastasize they may produce extensive local destruction and, hence, demand removal.

Treatment: They should be destroyed thoroughly by whatever method is best known to the individual operating. It is our opinion that the actual cautery, surgical excision, or radiation therapy are all reliable.*

Inasmuch as the purely basal cell epitheliomas do not metastasize, no therapy need be directed against the regional lymph nodes.

Squamous Cell Epitheliomas of the Skin.—The general characteristics of the lesions have been mentioned above. They are seen most frequently ,on the faces and dorsum of the hands of elderly persons and at the mucocutaneous junction. In contradistinction to the basal cell epitheliomas they quite commonly metastasize. Hence, treatment must not only be directed toward the local growth, but due consideration must be given to the regional lymph glands.

Treatment: Again, as in basal cell epitheliomas, there is difference of opinion as to best treatment, and alternate methods are apparently acceptable—radiation, cautery destruction, surgical excision. Destruction should be even more widespread, deep and radical. If the regional lymph glands are involved, they should be removed by block dissection. Preoperative and probably postoperative radiation should be given.

EPITHELIOMAS OF THE LIP

Whenever any fissure, ulcer, erosion or wart growth remains on the lip for a period longer than two to four weeks, one should suspect it to be malignant or potentially malignant.

Although basal cell epitheliomas do rarely occur on the lip (especially the upper lip), the hight percentage of lip cancers are of the metastasizing (squamous cell) type.

Treatment of local lesion: In general we hold to our principle that thorough removal or thorough destruction of the entire growth is necessary. The method of destruction which is to be used must be that with which the surgeon is most familiar. Electrocoagulation, actual cautery, thorough excision, or adequate radiation are standard procedures. Any of these methods will suffice for the control of the local growth if the removal is sufficiently radical.

Treatment of the lymph node extension:† Lymph gland dissection is a question of the greatest importance, and we recognize the opposing opinions of many clinicians. If the glands of the neck show definite involvement, but not to the degree of seeming hopelessness, we believe that radical neck dissection in conjunction with radiation therapy is in order.

If, on the other hand, there are no palpable glands we find ourselves in a dilemma. In such a case we believe that one can depend somewhat upon the degree of malignancy and the depth of invasion of the primary growth on the lip as judged by clinical and laboratory standards.

The following method of solving this problem is suggested. No biopsy is to be done until the patient is on the table ready for operation. A generous portion of the tumor is removed for immediate frozen section. Depending upon the pathologist's report and upon the clinical findings, one must decide as to his procedure in regard to the glands of the neck. If the lesion is superficial and nonindurated, and if the pathologist reports it to be of a low grade of malignancy, dissection of the glands may be omitted, but if induration is present, plus involvement of the muscle and a high degree of malignancy is determined on frozen section, the glands should be removed by block dissection. Pre- and postoperative radiation would seem to be in order. Where preoperative radiation has not been given, those cases that have had glandular involvement should have postoperative.†

Some members of the committee felt that no dissection of the neck should be undertaken in those cases in which no glands can be felt. If glands can be felt in the neck, then a block dissection of the neck is carried out, either preceding removal of the growth in the lip by one or two days or at the same time.

EPITHELIOMAS OF THE TONGUE

Although practically all cancers of the tongue are of the squamous cell type, and all highly malignant, there are two subdivisions which vary slightly in the degree of malignancy. There is a deeply destructive infiltrating type which produces craterform ulcers. This type is particularly malignant. The other type is more productive of papillomatous and warty growths which arise above the surface of the tongue and, although highly malignant, has a better prognosis than the destructive type.

Treatment: In our opinion, radical destruction of the growth by means of the actual cautery or electrocoagulation, or competent treatment of the entire involved area by means of interstitial radiation, is preferable to surgical excision. If the growth is very large, radium implants in the form of needles or seeds will serve to shrink it down and furnish a palliation. In certain cases a combination of radium and other destructive measures may seem to be in order. If the growth seems inoperable, radium should generally be used because of its marked palliative action.

The neck is not dissected unless glands are felt. If glands are palpable, block dissection of the neck should be done. Preoperative radiation should be given. It is often advisable to ligate one or both external carotid arteries.

PIGMENTED MOLES AND MELANOMAS

Solitary, blue-black moles should be removed by one skilled in this work. Incomplete removal is condemned. Removal should be by wide surgical excision.‡

---

* Note by Cancer Commission.—Difference of opinion, apparently irreconcilable, exists on this point. Some of the members of the Dermatology Committee insist that electrodesiccation is the method of choice. On the other hand, the Radiology Committee's report, previously published, pointed out that the great majority of basal cell epitheliomas are highly radiosensitive, and in the absence of bone or cartilage involvement, this method of treatment usually results in cure and is preferable, therefore, to surgical or electrocoagulation methods, except in the occasional radio-resistant lesion.

The Cancer Commission calls attention to this diversity of opinion without indorsing or condemning either method to the exclusion of the other.

† Note by Cancer Commission.—For additional discussion of treatment of lymph-gland area in lips and mouth cancer, see Appendix, also report of Radiology Committee.

‡ Note by Cancer Commission.—It has been suggested that massive (cauterizing) radiation has destroyed these lesions. (See report of Radiology Committee.) The Cancer Commission believes, however, that wide surgical removal is the safest procedure.

Appendix

LYMPH GLANDS IN CANCER OF LIP AND MOUTH

Sharp and irreconcilable difference of opinion arose in committee discussions over the proper procedure to be followed regarding the lymph-node bearing area in epitheliomata, especially of the lip. It was possible to reach agreement that, in general, surgical resection, radiation or cautery destruction of the primary lesion in lip cancer are equally safe methods. Men who preferred one method agreed, nevertheless, that other methods are acceptable.

Upon the question of whether dissection of the neck should be performed *in the absence of palpable metastatic glands,* it was impossible to reach agreement.

The Commission, therefore, undertook to ascertain the present-day practice of authorities throughout the world.

Of forty inquiries sent out to surgeons, radiologists, dermatologists and cancer clinics throughout the world, thirty were answered. The replies have been tabulated and a summary shows that there is a disagreement throughout the world corresponding to that appearing in California. The question is one remaining to be settled.

From the replies obtained the following is summarized:

(*a*) In the presence of cancer of the lip of sufficient size, duration or microscopic evidence of deep invasion to suggest possible metastasis, two-thirds of the correspondents (twenty) do not do dissection of the lymph glands if none are palpable, while one-third (ten) dissect the neck without waiting for gland enlargement.

(*b*) Of the group maintaining a conservative attitude (not dissecting the neck in the absence of gland enlargement) approximately two-thirds (fourteen versus six) give prophylactic radiation to the neck. This is done either by x-ray or radium pack or a combination.

In general a similar divergence of practice holds for cancer of the tongue and buccal mucous membrane. A detailed study of the replies received will be the subject of a separate communication to be published later.

COMMITTEE ON SKIN AND MOUTH TUMORS.

H. Sutherland Campbell, Chairman	Harry E. Miller
H. J. Templeton, Secretary	William Ophüls*
Harry E. Alderson	Charles E. Schoff
Stanley O. Chambers	George S. Sharp
Leo Eloesser	Henry J. Ullmann
	Stuart C. Way
	Louis F. X. Wilhelm

---

* Deceased.

Cancer Producing Substances.—It was announced last year that a pure chemical substance, dibenzanthracene, a synthetic product, had been found to possess powerful carcinogenic properties so that, when applied to mice, it caused cancer with considerable frequency. One of the dibenzanthracene series—namely 1:2:5:6—dibenzanthracene, provide to be the most potent cancer-producing substance so far encountered. This substance dissolved in fats has been used, successfully, to produce connective tissue tumors and sarcomata in rats and mice and is being tried on a variety of other animals. Subcutaneous injections in lard have caused spindle-celled sarcomata in thirty-one out of a total of ninety-three mice and in fifteen out of a total of sixty-seven rats. These tumors are true sarcomata and can be passed on by grafting into other rats or mice. In some cases the tumors have now reached as many as thirty-seven generations. The reaction of different animal tissues to tumor production is one of the subjects upon which this work may be expected to shed light.—Ninth Annual Report, British Empire Cancer Campaign, 1932.

Drugs in Cancer.—There is no scientific and medical evidence to show that any drug or combination of drugs will cure cancer. A radio talk delivered recently by Lord Moynihan, one of the world's leading cancer specialists, and president of the Royal College of Surgeons, England, against quackery in the sale and promotion of alleged cancer "cures" is worthy of repetition at this time in the United States. The British surgeon declared:

"The cancer curer is still a curse in every land, and the most pathetic credulity as to his claim is shown by people who should know better."

When taken in the early stages, cancer may be cured by surgical treatment. But the Food and Drug Administration is convinced that the sale of so-called cancer "cures" results not only in economic loss to the buyer, but, and far more important, may give the purchaser a false sense of security at a time when immediate action must be taken if the disease is to be cured.

In twenty-four years' regulatory operation of the Federal Food and Drug Act the Administration has instituted more than seventy court actions against more than forty so-called cancer "cures." In the rare instances where such fakes enter interstate commerce today the Government takes immediate legal action under the law.—United States *Daily,* April 1, 1932.

Protection by "Mustard Gas."—It was noted some time ago that "mustard gas" seemed to possess a power of retarding the production of cancer by these and other carcinogenic agents. Work has been proceeding in this field. It has now been established that a 0.05 per cent solution of mustard gas applied to the skin of mice who were being treated with dibenzanthracene entirely prevented the appearance of tumors. As the applications of the mustard gas were not made synchronously with the applications of dibenzanthracene the possibility of a chemical effect upon the carcinogenic agent can be excluded. The conclusion is therefore suggested that mustard gas exerts a biological effect on the body cells whereby, in some curious and unknown manner, the effects of the cancer producing substance are counteracted. It should be noted that whereas all the mice, with a single exception, which had been used as "controls" in these experiments (that is to say had remained untreated) developed tumors, no tumor appeared in the case of the mice treated with dibenzanthracene and mustard gas. —Ninth Annual Report, British Empire Cancer Campaign, 1932.

Foundation for Cancer Research.—William H. Donner, retired steel manufacturer of Villanova, Pa., has established a fund of $2,000,000 for the furtherance of cancer research on a world-wide basis, to be known as the International Cancer Research Foundation. Mr. Donner stipulated that the fund should not be used to erect new buildings or laboratories, but to assist scientists to develop new theories and new research workers and to increase general interest in the cancer problem. The income of the fund is to be distributed to institutions throughout the world, not more than 35 per cent to any one and not more than from 50 to 60 per cent within the United States. Mr. Donner, who established the fund because of the death of a son in 1929, will act as president; Thomas S. Gates, LL. D., president of the University of Pennsylvania, Philadelphia, is vice-president, and the directors are Edward D. Weidlein of Mellon Institute for Industrial Research, Pittsburgh, and former Senator George Wharton Pepper, Philadelphia.—*The A. M. A. Journal,* July 2, 1932.

How necessary health is to our business and happiness, and how requisite a strong constitution, able to endure hardship and fatigue, is to one that will make any figure in the world is too obvious to need any proof (John Locke, 1690).—*Weekly Bulletin, California Department of Public Health.*

STATE MEDICAL ASSOCIATIONS

This department contains official notices, reports of county society proceedings and other information having to do with the state associations and their component county societies. The copy for the department is edited by the state association secretaries, to whom communications for this department should be sent. Rosters of state association officers and committees and of component county societies and affiliated organizations, are printed in the directories noted under Miscellany, on the front cover index.

CALIFORNIA MEDICAL ASSOCIATION

GEORGE G. REINLE ....President
CLARENCE G. TOLAND ....President-Elect
EMMA W. POPE ....Secretary-Treasurer

OFFICIAL NOTICE

The fall meeting of the Council of the California Medical Association will be held in Los Angeles in September, the date to be published later.

COMPONENT COUNTY MEDICAL SOCIETIES

IMPERIAL COUNTY

The regular June meeting and dinner of the Imperial County Medical Society was held on June 20 at the De Anza Hotel, in Calexico. After dinner the meeting was called to order by Doctor Parker, and a short business meeting ensued. A resolution was passed that the next regular meeting, Tuesday, September 3, be held in Brawley.

Doctors Barmore, Minna, and Kortheur of Calexico were accepted as new members.

Dr. Julian Cohn of Los Angeles presented a paper on *Newer Treatment of Hay Fever* that was much enjoyed and discussed by the members. Following this, motion pictures of Kanavel's *Diagnosis and Treatment of Infections of the Hand* were shown and enjoyed.

The society was then adjourned, to meet again in September, after the customary summer vacation.

George C. Holleran, *Secretary.*

⁂

SAN JOAQUIN COUNTY

The stated meeting of the San Joaquin County Medical Society was called to order at 8:15 p. m. by Dr. J. F. Doughty, president, Thursday, June 1, in the Medico-Dental clubrooms, 242 North Sutter Street, Stockton.

A letter from Mrs. M. E. Mack concerning a proposed colony for tuberculous patients was read. Doctor Dozier moved that the matter be laid on the table. Seconded and carried.

Dr. Dewey Powell moved that, considering the nature of the program to be presented at this evening's meeting, all matters issued for publication be left to President Doughty or persons designated by him. Seconded and carried.

The paper of the evening was read by Dr. Harry E. Kaplan under the title, *The Preliminary Report of the Committee on Social Problems.*

Dr. G. H. Rohrbacher moved that this report be accepted as read and the committee be empowered to proceed to put their plans into action. The motion was seconded and carried unanimously.

Dr. L. Dozier moved that the Advisory Committee be empowered to disseminate this report to their contacts or as they may see fit. This motion was seconded and brought out considerable discussion, but was finally carried unanimously.

There being no further business the meeting adjourned and refreshments were served.

C. A. Broaddus, *Secretary.*

CHANGES IN MEMBERSHIP

New Members (16)

Fresno County.—Elizabeth Ann Leggett.

Imperial County.—John B. Minna.

Los Angeles County.—Arthur G. Daniells, Jr., L. L. Jones, Charles LeRoy Haines, Thomas Francis Joyce, Bernard S. Pearson, John Conrad Redell, Jason Guild Wood.

Riverside County.—Emory Clement Boess.

San Bernardino County.—Edward Ewald Engel.

San Diego County.—S. D. Aiken, John R. Beardsley, J. Terrell Scott.

San Francisco County.—Jesse L. Carr.

Santa Barbara County.—G. Horace Coshow.

Transferred (4)

Joseph B. Blackshaw, from Contra Costa to Alameda County.

Robert M. Furlong, from San Francisco to Marin County.

D. Schuyler Pulford, from Yolo to Sacramento County.

Milton H. Saier, from San Francisco to Santa Clara County.

Resigned (3)

Mary R. Butin, from Fresno County.

Charles F. Mills, from San Luis Obispo County.

Arthur E. Serns, from Santa Barbara County.

In Memoriam

Dickson, George Gillespie. Died in Los Angeles, June 27, 1933, age 47 years. Graduate of College of Physicians and Surgeons, Los Angeles, 1918. Licensed in California, 1918. Doctor Dickson was a member of the Los Angeles County Medical Association, the California Medical Association, and a Fellow of the American Medical Association.

✝

Dray, Frank Raymond. Died in San Francisco, June 24, 1933. Graduate of Harvard University Medical School, Boston, 1898. Licensed in California, 1898. Doctor Dray was a member of the San Francisco County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

✝

Russell, Tracy George. Died in San Francisco, June 18, 1933, age 60 years. Graduate of Columbia University College of Physicians and Surgeons, New York City, 1899. Licensed in California, 1900. Doctor Russell was a member of the San Francisco County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

THE WOMAN'S AUXILIARY TO THE CALIFORNIA MEDICAL ASSOCIATION*

Component County Auxiliaries

Los Angeles County.—The Woman's Auxiliary to the Los Angeles County Medical Association had a brilliant gathering this month, the last meeting until October, with Mrs. A. Bennett Cooke, president, presiding. The luncheon meeting was held in the banquet hall of Ebell Club. Dr. Frederick D. Woellner, Ph. D., professor of education, University of California, Los Angeles, known for his humor and wisdom, was the guest speaker of the afternoon. His subject was *Civic Significance of Health.* He said no man can do his work and "stand the gaff," the impact of a critical public and meet it with ingenuity and creativeness unless the body resistance is sound. Society must keep down the many diseases assailing humanity—tuberculosis, social diseases, all infectious and contagious diseases.

Sleep, perfect relaxation, diet, and interest in work make for resistance to disease. It is not things themselves that get our "royal Angora," but our attitude toward things. We must be capable of adjusting our lives to new situations, must have interest in our work and in life's purposes, and keep stimulated and refreshed along the way. A sense of humor keeps one relaxed, and is a great balm. Doctor Woellner says, "Something is wrong with civilization when only the pretzel maker or the stockbroker can make a fortune. The public must be educated to the knowledge that health is a social problem, not an individual one. Only that individual is healthy whose mind, soul, and body are in harmony with the Cosmos."

Mrs. Shiftbougher, chairman of Current Events, introduced Mr. W. B. Wright, who gave a most interesting book review on "100,000,000 Guinea Pigs."

Mrs. Cooke introduced as guests of honor Mrs. Samuel Cary Dunlop, president of the Ebell Club, and Mrs. Louise Ward Watkins, president of the Friday Morning Club of Los Angeles, and Mrs. Austin of Bakersfield.

An interesting letter from Mrs. James F. Percy, national president of the Woman's Auxiliary, was read. Mrs. Percy wrote from Milwaukee, where she was attending the American Medical Association.

A letter from Mr. Ben Reed of the Public Health League was read in which he expressed appreciation for the Woman's Auxiliary.

* * *

San Diego County.—The regular meeting was held at the home of Mrs. W. H. Geistweit, Jr. The treasurer's report showed a balance of $278. This included $75 from a benefit bridge tea, but as all bills are not in yet, the final balance cannot now be stated. The bridge tea was given on June 6 for the benefit of the Crippled Children's Society, particularly to assist in building up a reserve for treatment of infantile paralysis.

Members were urged to visit VauClain Home, the home for the tuberculous in connection with the County Hospital. The president, Mrs. Charles E. Howard, reported one such visit. Dr. S. A. Parowski, speaker at the May meeting, had inspired interest in the home. Mrs. E. F. Birkenstock gave a concise and interesting summary of recent happenings in the medical world.

Dr. Harry C. Steinmet, professor of psychology at San Diego State College, gave a very stimulating talk, based on the book "Our Neurotic Age." Considerable discussion was provoked by the talk.

Members were urged to inform the Courtesy Committee during the summer of any ill members in order that flowers may be sent and calls made. The Auxiliary adjourned until September. A delightful tea hour followed.

Harriet L. Colby, *Secretary.*

Mercurochrome and Iodin as Disinfectants.—Simmons treated skin abrasions, superficial incisions and deep incisions, contaminated with undiluted broth cultures of either *Staphylococcus aureus* or *Streptococcus pyogenes,* for various periods of time with solutions of iodin and mercurochrome, respectively. Application of tincture of iodin to 151 wounds contaminated with staphylococci resulted in sterile cultures as follows: abrasions, 83.4 per cent; superficial incisions, 83.1 per cent, and deep incisions, 31.2 per cent; while its use on 59 wounds contaminated with streptococci resulted in sterilization as follows: abrasions, 75 per cent; superficial incisions, 80.9 per cent, and deep incisions, 82 per cent. Of the 210 contaminated wounds treated with tincture of iodin, the cultures from 156, or 74.2 per cent, were sterile. Mercurochrome used under similar conditions caused relatively little reduction in the numbers of viable test organisms and failed to sterilize any of the 210 wounds. Mercurochrome is comparatively so ineffective in the sterilization of contaminated living tissues that it should not be considered as a substitute for iodin.— *Surgery, Gynecology, and Obstetrics.*

Clinical Significance of Leukopenia. — Mettier and Olsan present five cases of severe leukopenia of obscure origin and call attention to the different types of bone marrow reaction occurring in the various cases, namely, aplasia of the bone marrow, depression of leukopoiesis only, hyperplasia of the leukopoietic tissue, and hyperplasia of the erythropoietic tissue. They also report a case of leukopenia associated with lymphangitis of the arm in a woman in whom recovery occurred during the course of the administration of nucleotide K-96. Among the 10,000 case histories of the patients cared for in the University of California Hospital from 1920 to 1931, examination of the blood revealed leukopenia in 1,167, or 11.67 per cent, of the cases. Of the 1,167 cases, leukopenia occurred in 611 females, or 52.4 per cent, and in 556 males, or 47.6 per cent. Leukopenia occurred frequently as a mild manifestation in patients with vague symptoms of one sort or another, such as chronic fatigue; 9.7 per cent of the cases of leukopenia were classified, therefore, as benign leukopenia of obscure origin. A table of the frequency incidence of leukopenia is given.—*Annals of Internal Medicine,* June, 1933.

Cold Quartz Light in General Practice.—Behneman gives a summary of the results of cold quartz radiation in eighty-one cases including sluggish ulcers, burns, endocervicitis, fistulas and rectal ulcers, Vincent's infection (trench mouth), acne, boils and carbuncles, nasal antrum disease with sinus involvement, and lesions of the urinary tract. He states the advantages of this type of generator as follows: It is within the wavelength of high germicidal action. It burns at a low temperature with possibilities of application directly to the skin. The orificial applicator has emission from its entire surface area. The grid lamp may be moved so that perpendicular ray exposure is possible at all times. Little erythema is evidenced for the radiation produced. There is a constancy of intensity. The handling and use are safe and convenient because of its light weight and detachability. There is usually a relatively low formation of pigmentation. There appears to be little of the red of the visible spectrum. It may be operated while in motion. The temperature at which it burns allows any design of applicator for insertion into body cavities.—*Archives of Physical Therapy.*

---

* As county auxiliaries to the Woman's Auxiliary to the California Medical Association are formed, the names of their officers should be forwarded to Mrs. Thomas J. Clark, chairman of the Publicity and Publications Committee, 40 Ross Circle, Oakland. Brief reports of county auxiliary meetings will be welcomed by Mrs. Clark and must be sent to her before publication takes place in this column. For lists of state and county officers, see advertising page 6. The Council of the California Medical Association has instructed the editor to allocate one page in every issue for Woman's Auxiliary notes.

MISCELLANY

Under this department are ordinarily grouped: News; Medical Economics; Correspondence; Twenty-five Years Ago column; Department of Public Health; California Board of Medical Examiners; and other columns as occasion may warrant. Items for the News column must be furnished by the fifteenth of the preceding month. For Book Reviews, see index on the front cover, under Miscellany.

NEWS

Coming Meetings.

California Medical Association, Riverside, California, April 30 to May 2, 1934. Emma W. Pope, M. D., Secretary, 2004 Four Fifty Sutter, San Francisco.

Nevada State Medical Association, Las Vegas, Nevada, September 29 to 30, 1933. Horace J. Brown, M. D., Secretary, Medico-Dental Building, Reno.

Washington State Medical Association, Seattle, August 28 to 30, 1933. Curtis H. Thomson, 1305 Fourth Avenue, Seattle, Washington.

Medical Broadcasts.*

American Medical Association Health Talks.—The American Medical Association broadcasts on Tuesday and Thursday from 9:15 to 9:20 a. m., Chicago daylight saving time, which is one hour faster than central standard time, over Station WBBM (770 kilocycles, or 289.4 meters).

There is also a fifteen-minute talk, sponsored by the association, on Saturday morning from 9:45 to 10 o'clock over Station WBBM.

* * *

San Francisco County Medical Society.—The San Francisco County Medical Society broadcasts every Tuesday from Station KFRC, 4 to 4:15 p. m., and over Station KJBS from 11:15 to 11:30 a. m.

* * *

Los Angeles County Medical Association.—The radio broadcast program for the Los Angeles County Medical Association for the month of August is as follows:

Tuesday, August 1—KECA, 9:30 to 9:45 a. m. and KFI, 10 to 10:15 a. m. Subject, How to Extend Youth.

Tuesday, August 8—KECA, 9:30 to 9:45 a. m. and KFI, 10 to 10:15 a. m. Subject, Cause of High Cost of Illness.

Tuesday, August 15—KECA, 9:30 to 9:45 a. m. and KFI, 10 to 10:15 a. m. Subject, Life's Necessities.

Tuesday, August 22—KECA, 9:30 to 9:45 a. m. and KFI, 10 to 10:15 a. m. Subject, Problems of Nutrition.

Tuesday, August 29—KECA, 9:30 to 9:45 a. m. and KFI, 10 to 10:15 a. m. Subject, Past Barred Windows.

Cancer Cures and Treatment.—The Bureau of Investigations of the American Medical Association has brought off the press a new edition of the pamphlet, "Cancer Cures and Treatment." This interesting pamphlet deals with thirty-nine "cures" and "treatments" exploited from fifteen different states. The pamphlets are sold at a nominal price of 15 cents each.

Stanley McCormick Guardian Named.—According to a United Press dispatch, Dr. W. S. Franklin of Santa Barbara on July 18 was accepted as a member of the board of five guardians appointed for Stanley McCormick, multimillionaire incompetent.

On a motion of McCormick's wife, Katherine Dexter McCormick, Superior Judge A. B. Bigler appointed Doctor Franklin to the post over the protests of a sister and brother, Harold McCormick and Anita McCormick Blaine.

Rating Service Extended to Private Practice.—A plan recently adopted by the Cleveland Academy of Medicine for investigation of the financial condition of patients unable to meet full charges for medical service has now been placed at the disposal of any member of the academy who wishes to send patients for ratings. The patient will pay a fee of 50 cents to the bureau of social service, which is under the direction of a trained worker. The development of social service as an adjunct to the private practice of medicine is said to be unprecedented. The bureau plans also to advise families in preparing budgets to allow for the exigencies of illness.—*Journal of the American Medical Association,* July 15.

Physicians in Conservation Camps.—Nine hundred and fifty-nine physicians have been assigned to the work of rendering medical care and treatment to 240,514 men in the Civilian Conservation Forestry Camps and Army Reconditioning Camps. The number includes 472 members of the Medical Reserve Corps, 126 army medical officers, 203 naval medical officers, 82 physicians on full-time contract basis, and 76 on part-time contract. Officials of the War Department estimate that 200 more physicians will be required as soon as a total of 300,000 men in camps has been reached. Nine hundred camps are now in operation out of a total of 1,639 planned. Officers of the Medical Reserve Corps with rank of lieutenant or captain and other physicians desiring such service should make application to the commanding general of the corps area in which they live.

Ninth Corps Area.—Headquarters, Presidio of San Francisco. States included: Washington, Oregon, Idaho, Montana, Utah, Nevada, California, and portion of Arizona.

Tree Planted in Memory of Late Doctors Fitch C. E. Mattison and Charles D. Lockwood.—A live-oak tree was planted in the new garden at Pasadena Hospital on June 20 in memory of two well-beloved Pasadena citizens, noted as surgeons: Dr. Charles D. Lockwood and Dr. Fitch C. E. Mattison.

The tree was planted by the Woman's Auxiliary of Pasadena Hospital. The ceremonial of the tree dedication took place at 11 o'clock. Mrs. Lockwood, widow of Doctor Lockwood, and Mrs. Bess Behr, daughter of Doctor Mattison, placed the first spadeful of earth around the tree.

Members of the hospital medical staff, the Woman's Auxiliary, and employees of the institution, all of whom held Doctors Lockwood and Mattison in warm affection, attended the ceremonial, which was in charge of Mrs. Frederick Mills.

The garden where the memorial oak will spread its friendly shade was presented to the hospital by the Woman's Auxiliary recently.—Pasadena *Star-News.*

American Urological Association. — At the recent annual session of the American Urological Association, Dr. Miley B. Wesson of San Francisco was elected president. This is the first time in some twenty years that this office has been held by a Pacific Coast urologist.

---

* County societies giving medical broadcasts are requested to send information as soon as arranged (giving station, day, date and hour, and subject) to California and Western Medicine, 450 Sutter Street, San Francisco, for inclusion in this column.

CORRESPONDENCE

Subject of following letter: Excerpts from a communication from a well-known eastern colleague.

July 20, 1933.

Dear Doctor Kress:—Thank you for your letter. I have continued my interest in your legislative problems by reading your excellent journal *every* month. Frankly, your journal is one of the state publications that I find profitable reading.

I have perceived your legislative difficulties. I recognize the forces you have to contend with. I appreciate the tremendous amount of work that devolves upon Doctor Harris. You are very fortunate in having his services and time.

Likewise I have been very interested in the several California plans advanced to provide medical care. I am endeavoring to keep an open mind midst all this anxiety and perplexity that confronts our profession. My chief concern is for and about the individual doctor. The large majority of them have no conception of the forces that are invading the field of medicine. They continue unconcerned and make no effort, still they wonder why conditions are as they are. When medicine fails, it will be because the individual doctor failed. Just how we can best get around him and prevent his failure is a vital problem.

We are endeavoring to blaze a way based upon our survey findings. We are developing plans. . . .

Our legislative burdens became easier by the adjournment of our legislature last Monday. The ——— succeeded in passing their bill through both houses. Our Governor vetoed it, and the veto was sustained. This cult expended a large sum of money, and we had a "Cash and Carry" legislature. It looks as if we will have to expend more funds if we are to succeed in defeating these cults. I wonder if we should, as did Minnesota. . . .

California had a fine delegation in the House in Milwaukee. Keep sending them, in order that they become familiar with procedures and national problems.

Sincerely,

(Signed) ....

Subject of following letter: A communication regarding Assembly Bill 539 (Commitment of Mental Patients). See also June California and Western Medicine, page 476.

TO THE MEMBERS AND FRIENDS OF THE SOUTHERN CALIFORNIA
COMMITTEE ON PROPOSED CHANGES IN
COMMITMENT LAWS

Governor Rolph vetoed Assembly Bill 539 (for the commitment of mental patients to state hospitals) because of the opposition to the bill by the California Sheriffs' Association.

The sheriffs opposed this humanitarian measure because of its provision that the function of transportation of mental patients to state hospitals be assumed by attendants from the state hospitals, thus depriving the sheriffs of the fees paid by the state for the exercise of that function.

The sheriffs induced the county supervisors to oppose it through their erroneous claim that the counties would be put to great expense if the use of jails for the detention of mental patients pending commitment were abolished.

Amendments had been made in an effort to save the remainder of the bill through meeting the objections of the sheriffs and supervisors. These amendments permitted the sheriffs to continue to transport mental patients to the state hospitals (oftentimes in handcuffs), and permitted the continuance of the preliminary detention of mental patients in jails (in twenty-eight counties jails used for such detention, and in seventeen additional counties jail-like facilities).

The persistent opposition by the sheriffs in the face of these amendments is believed to have been based upon their apprehension that the bill, even as amended, might two years hence prove to be an entering wedge which would endanger their selfish interests.

Presumably only measures pertinent to the economic situation will be considered at the special July session of the legislature. In any event it appears best to defer further efforts to effect changes in the California commitment laws to a more favorable time.

* * *

Several thousand citizens of California have given this bill their interest, or interest and support. The Legal Aspects Committee of the American Psychiatric Association endorsed the bill, which goes to show that it is sound and has merited support. The Executive Committee extends thanks to the many friends of the bill, collectively, regretting that such expression of appreciation cannot be made personally and individually.

This is particularly to ask you whether you will be interested in the continuance of the work of this committee, possibly under another name such as the "Mental Health Association of California," as a statewide organization, nonpartisan and nonpolitical, with a broad scope in dealing with situations affecting the mentally disordered, the prevention of mental disorder, problems of childhood and, in brief, the general mental hygiene problems of the state.

Thanking you sincerely.

Glenn Myers, M. D.,
Chairman, Executive Committee.

1052 West Sixth Street, Los Angeles.

Subject of following letter: A communication from the Dental Educational Council of America on certain recommendations of the Commission on Medical Education.

THE DENTAL EDUCATIONAL COUNCIL OF AMERICA
PROVIDENCE, RHODE ISLAND

June 30, 1933.

To the Editor:—At a recent meeting of the Dental Educational Council of America the Council adopted the following minute relative to the final report of the Commission on Medical Education, and the secretary was instructed to send you a copy thereof, with the hope that you may publish it in the next issue of your journal.

"The Dental Educational Council of America has given special attention to the comment on dentistry on pages 216-217 of the 'Final Report of the Commission on Medical Education' (December, 1932). Included in the Commission's comment is the expressed opinion that 'dentistry should be developed under medical education.' No reasons for this intended subordination of dentistry are given excepting the general opinions that (a) 'it would seem logical', (b) 'would be consistent with university principles which no longer recognize the artificial separation of fields of knowledge'; and (c) 'would go far toward establishing a highly desirable and valuable correlation of the professional training of these two closely related fields of practice,' medicine and dentistry.

"These suggestions for the subjugation of the dental profession are neither impressive nor persuasive. To the Dental Education Council, cognizant of the related facts in the history of both medicine and dentistry, the proposed development of dentistry 'under' medical education in the United States (a) would seem to be illogical; (b) would be inconsistent with university principles which clearly recognize the public necessity for the self-determination of, and for appropriate differences in education for, the various professions; and (c) instead of correlating the professional training in medicine and dentistry, would degrade one profession for the exaltation of the other, and also demoralize the service of the practitioners thus dishonored.

"There should be intimate coördination between the principles and procedures of education for medical practice and for dental practice. Although remaining independent, these two forms of health-service education should be made more closely interdependent for the betterment of each. The Council and the dental schools have long promoted this mutual helpfulness. The strengthening of this constructive educational development in the public interest appeals to us as a far more important interprofessional objective than the relegation of one profession to a position of enforced inferiority. For the attainment of this worthier purpose, we pledge the cordial interest and effective coöperation of the faculties of the dental schools in the United States."

Albert L. Midgley,
Secretary.

1108 Union Trust Building.

TWENTY-FIVE YEARS AGO*

EXCERPTS FROM OUR STATE MEDICAL JOURNAL

Vol. VI, No. 8, August, 1908

From Some Editorial Notes.

Important Suggestion.—For most of the years of its life, this *Journal* has been one of those to raise its voice in the demand that more physicians take an active interest in the political control and government of our states and of our nation. Practically all law making has been done since the United States began as such by lawyers. As a result, we have more laws than we know what to do with, and our courts are, almost without exception, devoted to the matter of finding new technicalities in and conflicts between these numerous laws. The people have suffered. Public health legislation has been ignored. The voice of the scientific minister to the health and welfare of the people has not been heard, as it should have been, in our legislative halls. . . .

A New Home.—In April, 1906, the San Francisco County Medical Society lost its home and its library, which was fast reaching considerable proportions and distinct value. Practically every one of its members likewise suffered, and for a time the society was in a very precarious condition. But the meeting for June, 1908, two years and two months after the disaster, marked the beginning of a change for the better; at that time the Society held its first meeting in its new home. Once more San Francisco County has a real "home" for its library and for its meetings, and, through the most unbounded generosity of our brother physicians in all parts of the world, it also has, once more, a library of no mean proportions for the use of its members. About nine rooms on the top floor of the Butler Building (corner of Geary and Stockton streets) were secured before the building was finished and these have been thrown together, forming one large meeting room, with two smaller reading rooms adjoining. . . .

Such a Business!—The editor of the *Journal of the South Carolina Medical Association* has resigned from the American Medical Editors' Association and a recent number of his publication sets forth some correspondence explaining the whyfor. You see, the editor in question is a very active gentleman and his state organization is behind him, as it should be. He has repeatedly come out with arguments to the effect that the members of the society, other things being equal, should patronize those firms that advertise in their journal, and has urged the members, whenever a detail man comes into their office, to ask him whether his firm advertises with their journal, and if not, why. That is simple and reasonable. (Incidentally, in passing, let us urge upon the members of our own California society to do the same thing—and stick to it.) . . .

From an article on "The Stimulants Used in Cooking" by Douglass W. Montgomery, M. D., San Francisco.

The table as a piece of furniture should be held in great esteem. By turns it is loaded with learned books and succulent meats, which serve for nourishment for mind and body. . . .

But good and evil are born at a whelping, and while the table brings us much good, it also brings us much evil. Remonstrance is especially needed against the misuse of spices and pepper. . . .

(Continued on Advertising Page 14)

BOARD OF MEDICAL EXAMINERS OF THE STATE OF CALIFORNIA*

By Charles B. Pinkham, M. D.
Secretary-Treasurer

News Items

At a regular meeting of the Board of Medical Examiners held at Native Sons Hall, San Francisco, July 11 to 13, 1933, inclusive, 140 applicants appeared for written examination, the majority being graduates of medical schools. In addition to the routine business were heard fifteen cases on the legal calendar, with the following results:

Pedar S. Bruguiere, M. D., San Francisco, was found guilty of aiding and abetting an unlicensed practitioner, namely, James Morgan Clement, mentioned in "News Items" November, 1932, as promoting a secret cancer remedy. On July 13, 1933, Doctor Bruguiere's license was suspended for one year.

William H. Curtis, M. D., San Diego, was found guilty of narcotic derelictions. Revoked July 11, 1933.

Arthur Lee Davis, M. D., Los Angeles, was found guilty of narcotic derelictions. Revoked July 11, 1933.

George B. Dewees, M. D., Fresno, on July 12, 1933, was found guilty of habitual intemperance. Penalty deferred to the October meeting.

George Wellington Frasier, M. D., Los Angeles, on July 11, 1933, was found guilty of narcotic derelictions and placed on probation for a period of five years without narcotic permit or possession.

Henry L. Gardner, M. D., San Francisco. Hearing continued to October meeting.

Robert Blake Griffith, M. D., Beverly Hills, was found guilty of aiding and abetting an unlicensed practitioner, namely, Madame de Desley, mentioned in "News Items" September, 1926, January, 1927, June and July, 1933. On July 12, 1933, Doctor Griffith was placed on probation for five years.

Charles O. Lowry, M. D., Pasadena, was found guilty on July 11, 1933, of narcotic derelictions and was placed on probation for a period of five years without narcotic permit or privileges.

Richard J. Morrison, M. D., Santa Monica, was found guilty on July 11, 1933, following his plea of guilty to a violation of the State Poison Act re narcotics, and placed on one year probation.

James Archibald Ramsay, M. D., Santa Monica, was on July 11, 1933, found guilty and placed on one year probation, based upon his plea of guilty to violation of the State Poison Act re narcotics.

Zailik Saltzman, M. D., Los Angeles, was found guilty of aiding and abetting an unlicensed practitioner, namely, Madame de Desley, mentioned in "News Items," September, 1926, January, 1927, June and July, 1933, and on July 12, 1933, was placed on probation for a period of five years. (Previous entries, October and November, 1926.)

The cases of Charles E. Taylor, M. D., and Thomas D. Wyatt, M. D., were dismissed.

Further hearings of Isador A. Wallach, M. D., and Clayton E. Wheeler, M. D., were continued to the October meeting.

The license of Clarence Edwords, M. D., revoked October 21, 1930, on a charge of illegal operation, was restored July 12, 1933, and he was placed on probation for a period of five years.

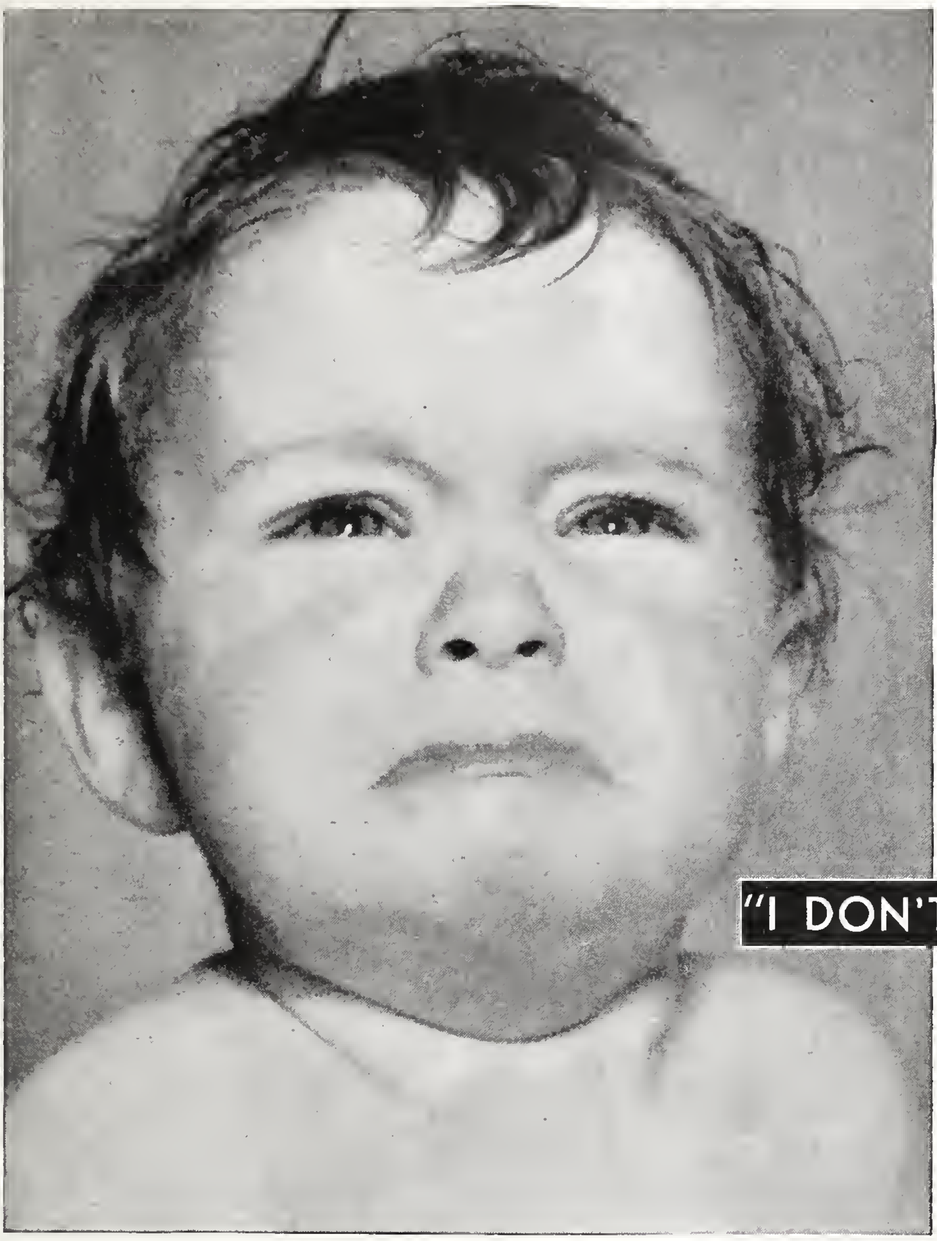
The board passed a resolution requiring that all applicants from foreign medical colleges must produce preliminary and premedical educational certificates acceptable to the California board, showing fulfillment, prior to matriculation, of the requirements of Section 9 of the Medical Practice Act. Such an applicant must

(Continued on Advertising Page 17)

---

* This column strives to mirror the work and aims of colleagues who bore the brunt of society work some twenty-five years ago. It is hoped that such presentation will be of interest to both old and recent members.

* The office addresses of the California State Board of Medical Examiners are printed in the roster on advertising page 6.



It takes more severity than many mothers can command to force spinach upon a tearful child. Yet careful menu-planning is needed to make up the 12 mg. of iron required daily. Leichsenring and Flor, as an example, found that children's diets planned to contain 5 and 8.5 mg. iron actually supplied only 3.25 and 6.5 mg., respectively, although the diet was designed to provide a high iron intake and included such foods as raisins, carrots, graham bread, prunes, lettuce, beef, and egg.[1]

"I DON'T LIKE SPINACH!"

PABLUM *tastes good*

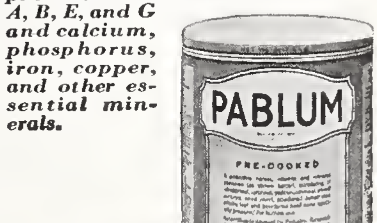
AND IS 566% RICHER IN IRON

PABLUM is a food that children really like and take willingly. Added to this virtue, it supplies *known* amounts of iron—more than any other food of equal caloric value! This unique pre-cooked cereal contains 566% more iron than fresh spinach with an iron content of 3.6 mg.[2] (The U. S. Dept. of Agriculture reports an even lower average for spinach—2.5 mg.[3]) When included in the child's daily diet from the third month on, Pablum is a valuable prophylactic against nutritional anemia. Besides the hemoglobin-building element, iron, Pablum contains copper and substantial amounts of calcium, phosphorus, and vitamins A, B, E, and G. Abundant, too, in calories, proteins, fat, and carbohydrates.

[1-3] *Bibliography on request.*

For a Delicious Cereal, Just Add Hot Water or Milk (hot or cold)—Pablum Requires No Cooking

Pablum consists of wheatmeal, oatmeal, cornmeal, wheat embryo, yeast, alfalfa leaf and beef bone. Supplies vitamins A, B, E, and G and calcium, phosphorus, iron, copper, and other essential minerals.



Supplied in 1-lb. cartons at drug stores

MEAD JOHNSON & CO., Evansville, Indiana, U.S.A. *Pioneers in Vitamin Research*

Please enclose professional card when requesting samples of Mead Johnson Products to cooperate in preventing their reaching unauthorized persons

COLLECTIONS

CREDIT RATINGS
TRACING (Lost Debtors)

WARNING:

Collection agencies with unsavory reputations change their names (but not their tactics) and are likely to "sting" again in the same place.

New agencies are opening up — inexperienced — untried, and without financial backing are seeking business at any price!

Ask YOUR ASSOCIATION before placing your business with ANY agency! ! !

Organized and Operated FOR YOU

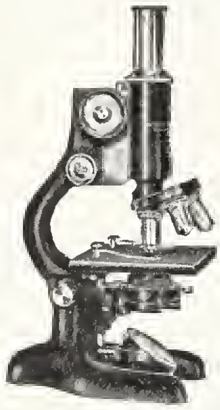
The Doctors Business Bureau

ESTABLISHED 1916 • • EXCLUSIVELY FOR DOCTORS

310–319 Bank of America Building
GArfield 0460
SAN FRANCISCO

Sixth Floor, Spreckels Building
TRinity 1252
LOS ANGELES

OAKLAND SALT LAKE CITY



THE NEW FFS-8 PHYSICIAN'S MICROSCOPE

with Rack and Pinion Substage and Divisible Abbe Condenser with 16 mm., 4 mm. and 1.9 mm. Oil Immersion Objectives, 2 Eyepieces and triple revolving Nosepiece. Complete in hardwood carrying case.

$120.00

BAUSCH & LOMB OPTICAL CO.
OF CALIFORNIA
28 GEARY STREET SAN FRANCISCO, CALIF.

(Continued from Page 31)

ing. They also serve as an aid in identification. In the fall the leaves become brilliantly colored, principally scarlet and orange—a circumstance which victimizes many an unsuspecting collector. On being wounded the stems exude a cream-colored juice which becomes black on exposure to the air. The juice is thin and watery in the spring, but becomes thicker as the season advances. The poisonous constituent is found in this juice.

Poison sumac is also known as poison ash, poison dogwood, poison elder, poison tree, poison wood, and thunderwood. It grows in swamps throughout the eastern half of the United States. It attains a height of from 5 to 20 feet and a trunk diameter of 4 to 10 inches. The bark of the shrub is light gray in color. The leaves are compound and are from 7 to 14 inches in length, each bearing from seven to thirteen leaflets. In autumn they take on wonderfully beautiful colors, brilliant reds, oranges and yellows predominating. . . . The fruit is a globular drupe of the size of a small pea, and ivory-white when ripe.

When wounded, poison sumac exudes a thick juice of the color and consistency of cream which is very poisonous. On exposure to the air the juice is converted into an almost indestructible black varnish, which is not poisonous. . . .

In 1895 Dr. Franz Pfaff, of the Harvard Medical School, proved by a series of carefully controlled experiments that the poison of poison ivy was neither a gas, an alkaloid nor a volatile acid, but that it was a liquid, nonvolatile substance having some of the properties of resins. It was so very poisonous that 1/60,000 of a grain of it, when dissolved in olive oil and rubbed on the skin, caused mild poisoning. Larger doses when given to rabbits by the stomach, caused death from inflammation of the kidneys, that is, Bright's disease.

The poisonous principle is found in the cell sap, in the green leaves and in the green fruits. It is not

CANYON SANATORIUM
REDWOOD CITY, CALIFORNIA

An Open Air Sanatorium for the Treatment of Tuberculosis and Diseases of the Chest.

NESTLED IN THE FOOTHILLS
For booklet giving full particulars write **RALPH B. SCHEIER, M. D.,** *Medical Director*
San Francisco Office: **490 POST STREET** , *Telephone* **DOUGLAS 4486**

found in the pollen, or in the plant hairs which occur on the leaves and growing stems. Also the ripe leaves do not contain much of it.

The poisonous principle of poison ivy is probably identical with that of poison sumac. . . .

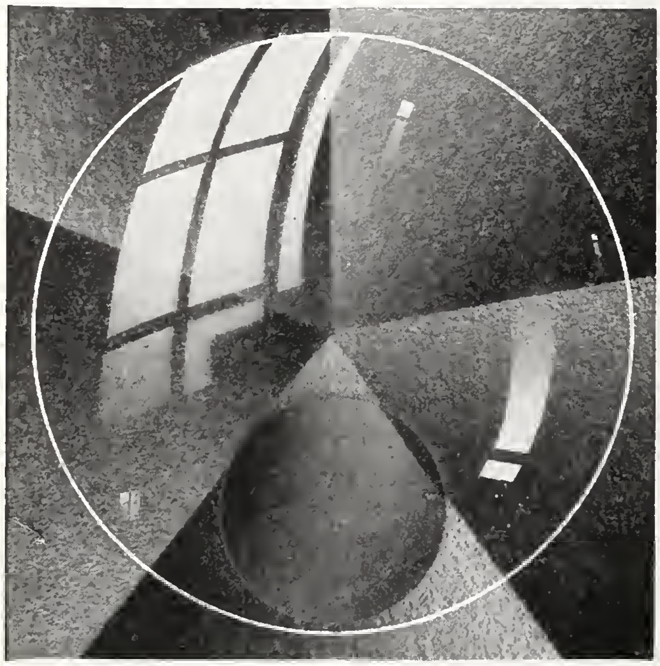
How Poisoning Takes Place.—The poison of these plants not being volatile, the only way that one may be poisoned by them is to come into direct contact with the poison. This may result from touching the plants or from coming in contact with clothing, shoes, tools, and the like, which themselves have been contaminated with the sticky juice. The poison retains its virulence for a great length of time, so that if contaminated clothing or tools be laid aside at the close of the season, poisoning may result the next season on their use being resumed. . . . Smoke from the burning plants may carry minute particles of the poison. If this touches the skin or is breathed, poisoning will result. Eating the leaves of the plants (as is sometimes done in the hope of producing immunity) will result in poisoning if appreciable quantities be ingested. Smearing the juices of the plants on the body (for the production of immunity) has resulted in several very severe cases of poisoning.

Does Ivy Poisoning Ever Cause Death?—The question whether ivy poisoning ever causes death is unsettled. Instances are known where death has occurred during a severe attack of ivy poisoning, but these were under conditions such that the existence of previous kidney disease could not be ruled out. It is conceivable that a person with Bright's disease in an advanced stage might be severely poisoned and that the combination of the two diseases might prove disastrous, whereas neither alone would have been fatal immediately. At any rate, fatalities from ivy poisoning are rare.

Immunity.— . . . Many persons claim that they have worked frequently in and around poison ivy or poison sumac and have never been poisoned. They assume this to be proof of immunity. Also there are pharmaceutical preparations made from ivy or sumac which, when taken by intramuscular injection in small doses, are designed to render individuals partially immune to the poison. McNair has investigated the subject and he believes that immunity, or at least greatly lessened susceptibility, is possible. In the opinion of the speaker, also based upon considerable study, it seems very doubtful whether there are any persons who are naturally immune to the poison. The speaker has met several of these self-styled immunes, but has found only one who was willing to submit to laboratory tests with the purified poison on the skin of the arm. This person was not immune.

How to Avoid Poisoning by Poison Ivy, Oak, or Sumac. Naturally the first requirement to avoid poisoning is to be able to recognize the poisonous plants at sight. The next is to avoid touching the plants or allowing the clothing to come in contact with them. Avoid using clothing or tools which have previously been contaminated with the juices of the plant until after they have been thoroughly scrubbed with soap suds. If a person has touched the poisonous plants or has reason to suspect that he has, he should wash the hands or other exposed parts of the body with coal oil, rubbing alcohol or gasoline, avoiding the ethyl type of the latter, and having due regard to the fire hazard. Afterward the parts should be thoroughly washed with strong soap suds, using a flesh brush and nail file. In the absence of gasoline or denatured alcohol the washing should be done with soap suds alone. Avoid the use of cold cream or ointments of any kind as these dissolve the poison and tend to cause its spread of contaminating the clothing. Unless one is able to identify these plants positively the collection of brightly colored autumn foliage from climbing plants or those having aerial rootlets or from swamp shrubs should be avoided. Also while on outings, wild berry pickings or hunting contacts with

(Continued on Next Page)



You Can Prescribe
No Better Bifocal Than

ORTHOGON - D
WHITE OR SOFT-LITE

●

Invisible Segment
No Color Aberration
Corrected Curves

RIGGS OPTICAL COMPANY
Established in Sixty Western Cities

ASSOCIATED OPTICAL COMPANY
LOS ANGELES SAN DIEGO PHOENIX LONG BEACH SANTA ANA

THE SAN FRANCISCO BANK
SAVINGS COMMERCIAL TRUST
INCORPORATED FEBRUARY 10TH, 1868
One of the Oldest Banks in California, the Assets of which have never been increased by mergers or consolidations with other Banks.

MEMBER ASSOCIATED SAVINGS BANKS OF SAN FRANCISCO
526 California Street, San Francisco, Cal.
June 30th, 1933

Assets **$159,206,708.91**
Capital, Reserve and Contingent Funds **$6,500,000.00**

The following accounts stand on the Books at **$1.00** *each, viz.:*

Bank Buildings and Lots - - - - - (Value over **$2,100,000.00**)
Other Real Estate - - - - - - - - (Value over **$520,000.00**)
Pension Fund - - - - - - - - - - (Value over **$800,000.00**)

MISSION BRANCH .... Mission and 21st Streets
PARK-PRESIDIO BRANCH .... Clement St. and 7th Ave.
HAIGHT STREET BRANCH .... Haight and Belvedere Streets
WEST PORTAL BRANCH .... West Portal Ave. and Ulloa St.

Interest on Deposits is Computed Monthly and Compounded Quarterly, and may be withdrawn quarterly.

(Continued from Preceding Page)

thickets and tangled brushwood should be avoided as much as possible.

Treatment of Poisoning.— . . . Among the remedies which have been recommended by a considerable number of physicians are aqueous solutions of sodium sulphite, dextrose, magnesium sulphate (Epsom salt), picric acid, permanganate of potash, and 5 per cent iron chlorid in 50 per cent alcohol. McNair recommends that after the application of one of these solutions, preferably the iron chlorid, the surface be dried and melted paraffin applied as a spray with an atomizer. A thin layer of absorbent cotton is then laid on, followed by another layer of melted paraffin. This dressing is to be changed daily.

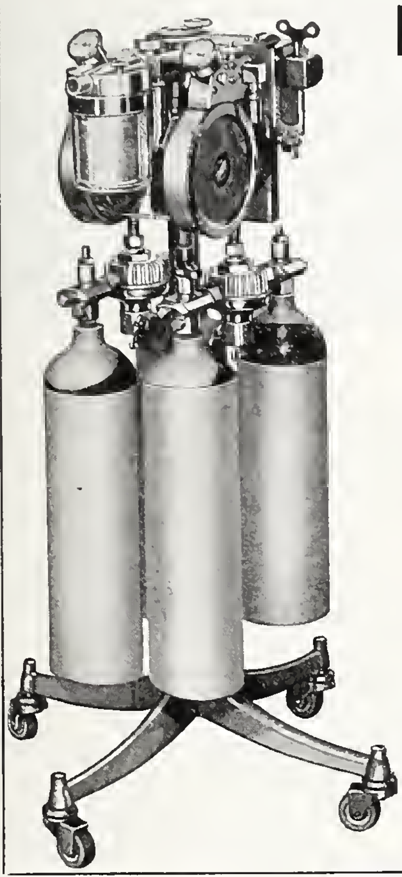
During the past few years extracts made from ivy or sumac have been given in the treatment of ivy or sumac poisoning. They are administered chiefly by intramuscular injections. Their introduction is too recent to determine whether they will have a permanent place in therapy. After all, in ivy poisoning, more than in almost any other disease, an ounce of prevention is worth many pounds of cure.

Methods of Eradicating Poison Ivy. — Various methods of eradicating poison ivy are advocated as control measures. The following abstract is from a bulletin of the United States Department of Agriculture:

Chemical Methods.

"1. Parts of plants above ground are readily killed by spraying with a strong brine solution which may be made by dissolving three pounds of salt in one gallon of water. Additional spraying may be necessary to kill new shoots. A better method is to cut the vines, especially if they are growing on fences and trees, below the ground, and then saturate the cut bases with brine. A second dose should be given in about two weeks.

"2. A thorough wetting with kerosene oil, applied by means of a spray pump or sprinkler, will kill plants after one or two applications. This oil should be used with care since it will also kill other plants if it comes in contact with them.



THE ANESTHETIST MUST HAVE
FAULTLESS EQUIPMENT

PERIODICALLY, we call to inspect your anesthetic equipment. This service is offered whether you use our equipment or not. It is based on the realization that *the anesthetist must have faultless equipment*. Day and night emergency service is maintained constantly for servicing and supplying apparatus for purchase or rental.

We distribute several lines of equipment, all made to the highest known standards. And, while none of it is made in our own plant, it is subjected to our own rigid inspection. The same policy of critical analyses of mechanism prevails with the same relentless vigilance as with our own medical gases. It is a fixed policy.

Certified Gases
NITROUS OXIDE • ETHYLENE • CARBON DIOXIDE
CARBOGEN • MEDICAL OXYGEN

CERTIFIED
LABORATORY PRODUCTS, LTD.
1379 Folsom St., San Francisco 1503 Gardena Ave., Glendale, Calif.
WEST COAST HOSPITAL SUPPLY COMPANY
Pacific Northwest Distributors
25 E. Sixth Street, Portland, Ore. 408 Battery Street, Seattle, Wash.

"3. The plants may also be killed by means of a spray consisting of a solution of sodium arsenite, using one pound to five gallons of water. This solution is very poisonous and should not be used where cattle have access to, and may eat the vines.

"4. Crude sulphuric acid will also kill the vines by application of a few drops of the acid to the base of the roots each week until they die."

Ploughing and Cultivation.—The vines may be killed by ploughing the soil and planting corn or other hoed crops. The cultivation of the soil by this method will cause the vines to gradually die out.

Smothering.—If the vines run along the ground they may be covered with tarred or other heavy paper to completely exclude the light. The edges of the paper should be pegged down well.

* * *

Another cheap and apparently effective means of control is the use of calcium chlorate. The following procedure, quoted from the *Rural New Yorker*, was published in *Health News* for October 6, 1930:

"The material used is *calcium chlorate*, not calcium chlorid or chlorid of lime as some have thought. It costs, in fifty-pound lots, about 11½ cents per pound. Smaller quantities are more expensive, but so little is required that cost for the area treated is trifling.

"The principle on which it works is that the chloric acid penetrates the tissues of the plant, gets into the sap and disorganizes growth.

"As used dry, it is dusted on lightly, when the leaves are damp with dew or rain so that it will not slide off. Its affinity for moisture from the air is so great that very soon the white dust disappears, and drops of moisture are in their place.

"As a spray, one pound is enough for from one to two gallons of water. The weaker solution may work, but this should be tried, as plants differ in resistance at times. A forcible spray is better than a mere sprinkling.

"It acts quickly. In two days the leaves will be withered, and its work goes on until the stem is shriveled and the whole plant apparently dead."—*Health News.*

Public Drinking Utensils Must Be Sterilized.—The California law prohibits the use of common drinking utensils in public places unless they shall have been thoroughly cleansed and sterilized in boiling water or steam between consecutive uses, or unless they are sterilized by an alternate method which shall render them bacteriologically sterile. The law specifies, however, that the use of cups or devices for individual use only is not prohibited.

The dipping of drinking water from casks, water coolers or other receptacles is also prohibited because of the possibility of contaminating such a water supply. All such containers must be provided with faucets or other suitable devices for drawing the water.

At this season of the year when soft drinks are in great demand in public places, it is highly important that local health officers secure the strict enforcement of this law.—*Weekly Bulletin, California Department of Public Health.*

More Honors for California Cities.—The Chamber of Commerce of the United States has announced that further analysis of the returns received in the National Health Conservation Contest, conducted by the chamber and the American Public Health Association, discloses the fact that Pasadena and Lodi are among the eight highest-scoring cities in the contest, regardless of population. The other six cities in this classification are: Detroit, Milwalkee, Syracuse, New Haven, East Orange, and Evanston. The first returns in the contest were based upon the records of these cities in their respective classifications as based upon population. The further analysis places these two Cali-

(Continued on Next Page)

St. Luke's Hospital
SAN FRANCISCO
A Limited General Hospital of 200 Beds

BENJAMIN H. DIBBLEE, *President*
I. C. KNOWLTON, *Secretary*

Executive Committee
ALANSON WEEKS, M. D., *Chairman*
GEORGE D. LYMAN, M.D.
HAROLD P. HILL, M. D.
W. G. MOORE, M. D.

HOWARD H. JOHNSON, M. D.
Secretary and Medical Director

Fully approved by the American College of Surgeons and the American Medical Association for Resident and Intern Training.

Limited Facilities for Part-Pay Treatment

Hydro-Electro and Physiotherapy Building

Alexander Sanitarium
Incorporated
Belmont, California
Telephone Belmont 40 P. O. Box 27

Hydro-Electro and Physiotherapy Treatments. Specializing in Recuperative and Nervous Cases. Homelike Atmosphere. Absolutely Modern in every respect. Inspection invited.

22 Miles from San Francisco—Situated in the beautiful foothills of Belmont, on Half Moon Bay Boulevard. The grounds consist of seven acres studded with live oaks and blooming shrubbery.

Just the place for the overworked, nervous and convalescent. Number of patients limited. Physician in attendance.

Address ALEXANDER SANITARIUM
Phone Belmont 40 Box 27, Belmont, Calif.

SEVEN YEARS' USE
has demonstrated the value of
THE SURGICAL SOLUTION
of
MERCUROCHROME,
H. W. & D.
in
Preoperative Skin Disinfection

●

This preparation contains 2% Mercurochrome in aqueous-alcohol-acetone solution and has the advantages that:

Application is not painful.
It dries quickly.
The color is due to Mercurochrome and shows how thoroughly this antiseptic agent has been applied.
Stock solutions do not deteriorate.

●

Now available in 4, 8 and 16 oz. bottles, and in special bulk package for hospitals.

Literature on request
HYNSON, WESTCOTT & DUNNING, Inc.
Baltimore, Maryland

(Continued from Preceding Page)

fornia cities among the highest scoring cities in the United States, regardless of their size—*Weekly Bulletin, California Department of Public Health.*

No one can estimate the ultimate effects of the depression, especially upon a disease like tuberculosis. No one can say what may be the harvest in this disease following the underfeeding and malnutrition that accompany such a period of stress. No one can forecast the serious results that might follow these conditions if people are unaware of the hazards and if appropriations and contributions for work by health departments and tuberculosis associations are not maintained on a level adequate to continue educational programs, to protect milk and food supplies, to maintain clinics, to find active cases, to give them adequate treatment in sanatoria and hospitals and, in particular, to protect infants and children from possible infection with this disease. This is indeed a serious obligation upon health authorities and one that they can meet only with intelligent public support (Dr. Donald B. Armstrong.)—*Weekly Bulletin, California Department of Public Health.*

The purpose is to focus attention upon our most precious national asset—our children. The tie between the child and all adult life is at once the strongest and the gentlest element in human nature. Greater sacrifices are made for children than for ourselves; greater happiness is derived from these sacrifices than from all the triumphs that personal success can bring. Our daily labors, whether in the home, or in the outside world of competition for material things, or even in the search for culture and for spiritual advancement, derive largely from the conscious or unconscious impulse to cherish the child and to hold the child's affection and respect (Herbert Hoover).—*Weekly Bulletin, California Department of Public Health.*

SOILAND CLINIC

Drs. Soiland, Costolow and Meland

1407 South Hope Street, Los Angeles, Calif.

Telephone PRospect 1418

HOURS: 9:00 to 4:00

A medical group organized and equipped for the study, diagnosis and treatment of neoplastic and allied disease.

ALBERT SOILAND, M D.
WM. E. COSTOLOW, M. D.
ORVILLE N. MELAND, M. D.
A. L. LINDBERG, M. D., *Pathologist*
A. H. WARNER, Ph. D., *Physicist*

Pablum—Mead's Precooked Cereal.—Mead Johnson & Company are now marketing Mead's Cereal in dried precooked form, ready to serve, under the name of Pablum. This product combines all of the outstanding mineral and vitamin advantages of Mead's cereal with great ease of preparation.

All the mother has to do to prepare Pablum is to measure the prescribed amount directly into the baby's cereal bowl and add previously boiled milk, water, or milk and water, stirring with a fork. It may be served hot or cold, and for older children and adults cream, salt and sugar may be added as desired.

Mothers will coöperate with physicians better in the feeding of their babies because Pablum is so easy to prepare. Samples may be obtained by writing to Mead Johnson & Company, Evansville, Indiana.

Cocomalt.—Recent developments in the study of child nutrition emphasize anew the importance of milk. It is and always will be the mainstay of the child's diet; and the continued refusal of a youngster to drink sufficient milk for his needs is indeed a serious problem.

Fortunately it is possible to convert milk into a drink all children adore. By the simple addition of Cocomalt, milk not only becomes a delicious chocolate flavor drink, but its food-energy value is practically doubled. Cocomalt in milk provides extra proteins, carbohydrates and minerals (calcium and phosphorus). It is also a rich source of vitamin D.

Thus Cocomalt not only induces youngsters to drink all the milk they require—it provides extra food-energy nourishment as well.

Cocomalt is accepted by the American Medical Association Committee on Foods.

Tell me how a people uses its leisure and I will tell you the quality of its civilization (Maeterlinck).—*Weekly Bulletin, California Department of Public Health.*

When Steers Had Long Horns

THE medicinal value of the glands of internal secretion was not recognized.

But times have changed, as well as cattle. Now, the therapeutic value of certain gland products is definitely established and each year adds to our knowledge in this important field of therapeutics.

To the physician prescribing gland products we urge specification of "Wilson," because it connotes a product made at the source of supply from fresh glands, processed promptly, with the aim of conserving maximum hormone activity, in a laboratory devoted exclusively to the endocrine field.

"This mark THE WILSON LABORATORIES your guarantee"

4221 S. Western Boulevard
CHICAGO, ILL.

Manufacturers of

STANDARDIZED ANIMAL DERIVATIVES,
LIGATURES and DIGESTIVE FERMENTS

Colfax School for the Tuberculous

Colfax, California

(Altitude 2400 feet)

This institution is for the treatment of medical tuberculosis and of selected cases of extrapulmonary (so-called surgical) tuberculosis.

The Colfax School for the Tuberculous consists of five Hospital Units with beds for patients who come unattended and a Housekeeping Cottage Colony for patients and their families.

The Colfax School for the Tuberculous offers the following advantages:

1. Patients are given individual care by experienced tuberculosis specialists. The patient is treated according to his individual needs.
2. Patients are taught how to secure an arrest of their disease, how to remain well when once the disease is arrested, and how to prevent the spread of the disease.
3. Patients have the advantage of modern laboratory aids to diagnosis and of all modern therapeutic agencies.
4. The climate of Colfax enables the patient to take the cure without discomfort twelve months in the year. We believe climate is secondary to medical supervision and rest, but the fact remains that it is easier to "cure" under good climatic conditions than where these climatic conditions are absent.
5. Colfax is accessible. It is on the main line of the Ogden Route of the Southern Pacific R. R. and has excellent train service. It can be reached by paved highway, being on the Victory Highway, with paved roads all the way to Colfax.

For further information address

ROBERT A. PEERS, M. D., *Medical Director*
Colfax, California

STATE MEDICAL LIBRARY

NEXT ANNUAL SESSIONS
California Medical Association, Riverside, April 30–May 2, 1934
Nevada State Medical Association, Las Vegas, Nevada, September 29-30, 1933
American Medical Association, Cleveland, Ohio (Meeting Date Later)

CALIFORNIA AND WESTERN MEDICINE

Owned and Published Monthly by the California Medical Association
FOUR FIFTY SUTTER, ROOM 2004, SAN FRANCISCO
ACCREDITED REPRESENTATIVE OF THE CALIFORNIA AND NEVADA MEDICAL ASSOCIATIONS

VOLUME XXXIX
NUMBER 3

SEPTEMBER · 1933

50 CENTS A COPY
$5.00 A YEAR

CONTENTS AND SUBJECT INDEX

SPECIAL ARTICLES:

Malignant Disease of the Colon. By Harvey B. Stone, Baltimore, Md. 145

The Future of Anesthesiology as a Medical Specialty. By Caroline B. Palmer, San Francisco 148

A Study of Five Hundred Consecutive Autopsies on Children. By C. M. Hyland, Los Angeles 151
Discussion by William M. Happ, Los Angeles; A. G. Foord, Pasadena.

Porro Cesarean Section. By Edmond M. Lazard, Los Angeles 156

Postmenopausal Hemorrhage. By Margaret Schulze, San Francisco 158
Discussion by R. Glenn Craig, San Francisco; John A. Sperry, San Francisco; H. N. Shaw, Los Angeles.

Circulation and Postural Change. By David G. Ghrist, Los Angeles 161
Discussion by Burrell O. Raulston, Los Angeles; Audley O. Sanders, Palo Alto; Thomas G. Inman, San Francisco.

Compensable Industrial Dermatoses. By Moses Scholtz, Los Angeles 165
Discussion by H. Sutherland Campbell, Los Angeles; Stuart C. Way, San Francisco; Stanley O. Chambers, Los Angeles.

Epilepsy in Children. By Howard R. Cooder, Los Angeles 169
Discussion by J. M. Nielsen, Los Angeles; William Palmer Lucas, San Francisco; Henry Douglas Eaton, Los Angeles.

Acute Perforated Peptic Ulcers. By George K. Rhodes, San Francisco, and Donald C. Collins, Rochester, Minnesota 173
Discussion by Burns Chaffee, Long Beach; John Homer Woolsey, San Francisco; Thomas O. Burger, San Diego.

Fractures of the Forearm. By Samuel S. Mathews, Los Angeles 177
Discussion by H. W. Spiers, Los Angeles; Alfred Edward Gallant, Los Angeles; Douglas D. Toffelmier, Oakland.

Corneal Ulcer—Its Treatment. By Harold F. Whalman, Los Angeles 181
Discussion by William A. Boyce, Los Angeles; M. F. Weymann, Los Angeles; Roderic O'Connor, Oakland.

Syphilitic Pneumonia. By Harvey T. Olsan and Stanley O. Chambers, Los Angeles 185
Discussion by H. W. Stephens, San Francisco; Norman Epstein, San Francisco; Barclay E. Noble, Los Angeles.

THE LURE OF MEDICAL HISTORY:

Johann Sigismund Elsholtz. Part IV. By Ethel Gladstone, San Francisco 190

CLINICAL NOTES AND CASE REPORTS:

Rupture of Uterus. By Leon J. Tiber, Los Angeles 193
Further Observations on Vaccine Therapy in Respiratory Conditions. By Francis Williams, San Francisco 194
Acute Leukemia. By William H. Barrow, San Diego 195

BEDSIDE MEDICINE:

Human Sterilization 199
Discussion by F. O. Butler, Eldridge; L. L. Stanley, San Quentin.

EDITORIALS:

California's New Clinic Law 204
Two Papers of Special Interest 205
Persistent Propaganda 205

EDITORIAL COMMENT:

Allergic Inactivation of Diphtheria Antitoxin. By W. H. Manwaring, Palo Alto 206
The Limited Value of the Information Obtained by a Blood Calcium Determination. By David M. Greenberg, Berkeley, and Lewis Gunther, Los Angeles 206

STATE MEDICAL ASSOCIATION:

C. M. A. DEPARTMENT OF PUBLIC RELATIONS 208
CALIFORNIA MEDICAL ASSOCIATION 210

MISCELLANY:

News 213
California's Clinic Law 214
Twenty-Five Years Ago 216
Board of Medical Examiners of the State of California 216
California Medical Association Directories Adv. pages 2, 4, 6
Book Reviews Adv. page 11

ADVERTISEMENTS—INDEX:

Adv. page 8

"Entered as second-class matter at the post office at San Francisco, California, under the Act of March 3, 1879." Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized August 10, 1918.

GREENS' EYE HOSPITAL

. . . for Consultation, Diagnosis, and Treatment of the Eye

BUSH AT
OCTAVIA
STREET

San Francisco

Telephone
WEst 4300

THE HOSPITAL

As an aid in the study and diagnosis of eye conditions, Greens' Eye Hospital maintains a fully equipped

Ear, Nose, and Throat Department

This department is conducted on the same basis as the eye clinic and is open to all patients for the treatment of Ear, Nose, and Throat.

●

EMERGENCY EYE SERVICE

A twenty-four hour emergency eye service including Sundays and holidays is now available with an Ophthalmologist on duty.

Staff

OPHTHALMOLOGY
Aaron S. Green, M. D.
Louis D. Green, M. D.
Martin I. Green, M. D.
Einar V. Blak, M. D.
Vincent V. Suglian, M. D.

OTOLARYNGOLOGY
Lafayette P. Monson, M. D.

Address Communications to Superintendent

BUSH

Patronize Your Home Firm

Because We Are Progressive

Announcing

The New BURDICK Morse Wave Generator

THE GREATEST ADVANCE IN LOW VOLTAGE CURRENT GENERATION

THE BURDICK

Morse Wave Generator

Has an Important Place in the Treatment of

- Adhesions
  - Post-operative
  - Intra-abdominal
  - Pelvic
- Ankylosis
- Arthritis
- Atrophy
  - Muscular
- Brachial Neuritis
- Cervical Stenosis
- Constipation
- Colitis
- Dysmenorrhea
- Endometritis
- Hair, Removal of
- Hemorrhoids
- Intestinal Stasis and Ptosis
- Menorrhagia
- Nerve testing
- Neuralgia
- Neuritis
- Obesity
- Paralysis
  - Bell's
  - Central
  - Infantile
  - Peripheral
- Rhinitis
  - Hypertrophic
- Scar Tissue
- Sciatica
- Stomach
  - Dilation and Ptosis of
- Warts

BURDICK Precision Water Cooled Quartz Lamp

Self-Contained Mobile Unit

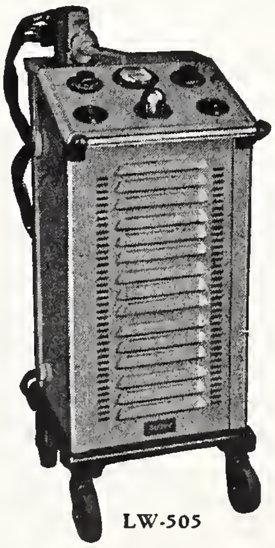
(Equipped with the Ever-Clear Window)

Here is the finest Water-cooled Lamp model manufactured today, in our estimation. The Burdick Mobile Unit carries its own supply of distilled water. You are thus independent of any outside source of supply.

This water is automatically cooled by an exclusive Burdick device. The Lamp may be operated for hours without overheating.

A few conditions in which ultra-violet radiation has achieved brilliant results are Alopecia, Eczema, Acne, Lupus, Ulcers, Dermatitis, Hay Fever, Tonsillitis, Vincent's Angina, Blepharitis, Gonorrhea, Bubo, Chancroid and simple forms of Cervicitis.

Descriptive literature and prices upon request.



LW-505

BUSH ELECTRIC CORPORATION

334 Sutter Street
SAN FRANCISCO, CALIF.
EXbrook 5090

2016 Wilshire Boulevard
LOS ANGELES, CALIF.
EXposition 1189

BUSH

Officers of the California Medical Association

General Officers

President—George G. Reinle, 204 Dalziel Building, 532 Fifteenth Street, Oakland.

President-Elect—Clarence G. Toland, 902 Wilshire Medical Building, 1930 Wilshire Boulevard, Los Angeles.

Speaker of House of Delegates—Edward M. Pallette, 502 Wilshire Medical Building, 1930 Wilshire Boulevard, Los Angeles.

Vice-Speaker of House of Delegates—John H. Graves, 977 Valencia •Street, San Francisco.

Chairman of Council—T. Henshaw Kelly, 830 Medico-Dental Building, 490 Post Street, San Francisco.

Chairman of Executive Committee—Karl L. Schaupp, 530 Medico-Dental Building, 490 Post Street, San Francisco.

Chairman of the Committee on Public Relations—Charles A. Dukes, 601 Wakefield Building, 426 Seventeenth Street, Oakland.

Secretary-Treasurer—Emma W. Pope, Four Fifty Sutter Street, Room 2004, San Francisco.

Editor—George H. Kress, 945 Roosevelt Building, 727 West Seventh Street, Los Angeles.

General Counsel—Hartley F. Peart, Room 1800, 111 Sutter Street, San Francisco.

Associate General Counsel—Hubert T. Morrow, Van Nuys Building, 210 West Seventh Street, Los Angeles

Councilors

District Councilors

First District—Imperial, Orange, Riverside, and San Diego Counties, W. W. Roblee (1935), 202 Mission Inn Rotonda, Riverside.

Second District—Los Angeles County, Carl R. Howson (1936), 711 Merritt Building, 307 West Eighth Street, Los Angeles.

Third District—Kern, San Bernardino, San Luis Obispo, Santa Barbara and Ventura Counties, Henry J. Ullmann (1934), 1520 Chapala Street, Santa Barbara.

Fourth District—Calaveras, Fresno, Inyo, Kings, Madera, Mariposa, Merced, Mono, San Joaquin, Stanislaus, Tulare and Tuolumne Counties, Fred R. DeLappe (1935), 218 Beaty Building, 1024 J Street, Modesto.

Fifth District—Monterey, San Benito, San Mateo, Santa Clara and Santa Cruz Counties, Alfred L. Phillips (1936), Farmers and Merchants Bank Building, Santa Cruz.

Sixth District—San Francisco County, Karl L. Schaupp (1934), 530 Medico-Dental Building, 490 Post Street, San Francisco.

Seventh District—Alameda and Contra Costa Counties, Oliver D. Hamlin (1935), Federal Realty Building, Oakland.

Eighth District—Alpine, Amador, Butte, Colusa, El Dorado, Glenn, Lassen, Modoc, Nevada, Placer, Plumas, Sacramento, Shasta, Sierra, Sutter, Tehama, Yolo, and Yuba Counties, C. E. Schoff (1936), 322 Medico-Dental Building, 1127 Eleventh Street, Sacramento.

Ninth District—Del Norte, Humboldt, Lake, Marin, Mendocino, Napa, Siskiyou, Solano, Sonoma and Trinity Counties, Henry S. Rogers (1934), Petaluma.

Councilors-at-Large

George G. Hunter (1935), 910 Pacific Mutual Building, 523 West Sixth Street, Los Angeles.

C. O. Tanner (1936), 3255 Fourth Street, San Diego.

William H. Kiger (1934), 911 Wilshire Medical Building, 1930 Wilshire Boulevard, Los Angeles.

Morton R. Gibbons (1935), Union Square Building, 350 Post Street, San Francisco.

T. Henshaw Kelly (1936), 830 Medico-Dental Building, 490 Post Street, San Francisco.

Junius B. Harris (1934), Medico-Dental Building, 1127 Eleventh Street, Sacramento.

Standing Committees

Executive Committee

The President, the President-elect, the Speaker of the House of Delegates, the Chairman of the Council, the Chairman of the Auditing Committee, the Chairman of the Committee on Public Relations, the Secretary-Treasurer and the Editor. (Karl L. Schaupp, chairman; Emma W. Pope, secretary.)

Auditing Committee

O. D. Hamlin	Oakland	1933
Morton R. Gibbons	San Francisco	1933
Karl L. Schaupp (Chairman)	San Francisco	1933

Committee on Associated Societies and Technical Groups

R. Manning Clarke (Chairman)	Los Angeles	1934
Clifford Sweet	Oakland	1935
William H. Geistweit	San Diego	1936

Committee on Extension Lectures

Robert T. Legge (Chairman)	Berkeley	1934
James F. Churchill	San Diego	1935
J. Homer Woolsey	San Francisco	1936

Secretary ex officio

Committee on Health and Public Instruction

Langley Porter	San Francisco	1934
Fred B. Clarke (Chairman)	Long Beach	1935
W. R. P. Clark	San Francisco	1936

Committee on History and Obituaries

George D. Lyman	San Francisco	1934
Charles D. Ball (Chairman)	Santa Ana	1935
J. Marion Read	San Francisco	1936

Secretary ex officio
Editor ex officio

Committee on Hospitals, Dispensaries and Clinics

Karl L. Schaupp	San Francisco	1934
John C. Ruddock	Los Angeles	1935
Daniel Crosby (Chairman)	Oakland	1936

Committee on Industrial Practice

Harry E. Zaiser	Orange	1934
Morton R. Gibbons (Chairman)	San Francisco	1935
Mott H. Arnold	San Diego	1936

Committee on Medical Defense

Henry Snure, Sr. (Chairman)	Los Angeles	1934
George G. Reinle	Oakland	1935
Fred R. De Lappe	Modesto	1936

Committee on Medical Economics

Willard Stone	Pasadena	1934
John H. Graves (Chairman)	San Francisco	1935
William R. Molony, Sr.	Los Angeles	1936

Committee on Medical Education and Medical Institutions

H. A. L. Ryfkogel	San Francisco	1934
George Dock (Chairman)	Pasadena	1935
George G. Hunter	Los Angeles	1936

Committee on Membership and Organization

LeRoy Brooks	San Francisco	1934
Harry H. Wilson (Chairman)	Los Angeles	1935
Dewey R. Powell	Stockton	1936

Secretary ex officio

Committee on Publications

Percy T. Magan (Chairman)	Los Angeles	1934
Ruggles A. Cushman	Talmage	1935
Frederick F. Gundrum	Sacramento	1936

Secretary ex officio
Editor ex officio

Committee on Public Policy and Legislation

E. T. Remmen	Glendale	1934
Junius B. Harris (Chairman)	Sacramento	1935
Fred R. De Lappe	Modesto	1936

President ex officio
President-elect ex officio

Committee on Scientific Work

Lemuel P. Adams	Oakland	1934
J. Homer Woolsey	Woodland	1935
F. M. Pottenger	Monrovia	1936

H. O. Koefod, Secretary of Section on General Medicine, ex officio
Edwin M. Taylor, Secretary of Section on General Surgery, ex officio
Emma W. Pope (Chairman), ex officio

Committee on Arrangements (Annual Session 1934)

William W. Roblee (Chairman)	Riverside	1934
Hervey S. Faris	Riverside	1934
G. Wayland Coon	Riverside	1934
Bon O. Adams	Riverside	1934
Arthur W. Walker	Riverside	1934

Committee on Public Relations

The Committee on Public Relations consists of the chairmen of the following standing committees and of certain general officers of the Association, all serving ex officio. The chairman of the committee is Dr. Charles A. Dukes, the secretary is Dr. Emma W. Pope. The director of the Department of Public Relations is Dr. Walter M. Dickie.

Fred B. Clarke	Chair., Com. on Health and Public Instruction
Daniel Crosby	Chair., Com. on Hospitals, Dispensaries, Clinics
Morton R. Gibbons	Chair., Com. on Industrial Practice
Harry H. Wilson	Chair., Com. on Membership and Organization
John H. Graves	Chair., Com. on Medical Economics
Junius B. Harris	Chair., Com. on Public Policy and Legislation
Charles A. Dukes	Chair., Cancer Commission
George G. Reinle	President of the California Medical Association
Clarence G. Toland	President-elect
Emma W. Pope	Secretary-Treasurer

Communications for the Public Relations Department should be addressed to the Director, Dr. Walter M. Dickie, Room 2039, 450 Sutter Street, San Francisco.

Cancer Commission

Charles A. Dukes (Chairman)	Oakland	1934
Lyell C. Kinney (Vice-Chairman)	San Diego	1934
Alson R. Kilgore (Secretary)	San Francisco	1934
Orville Meland (Sec'y for Southern Section)	Los Angeles	1935
A. Herman Zeiler	Los Angeles	1935
Gertrude Moore	Oakland	1935
Harold Brunn	San Francisco	1936
Henry J. Ullmann	Santa Barbara	1936
Clarence G. Toland	Los Angeles	1936

Communications for the Cancer Commission should be addressed to the Secretary, A. R. Kilgore, M. D., Room 2039, 450 Sutter Street, San Francisco.

(Roster lists continued on advertising page 4)

SPECIAL MOTORCYCLE SERVICE
HOURS: Week Days, 8 A. M. to 9 P. M. . . . . Sundays, 9-1, 6-8
Special attention given all telephone prescriptions. Four stores will furnish special motorcycle service delivery to any part of the city at any hour of the day or evening.

Broemmel's Prescription Pharmacies
ESTABLISHED 1868
SERUMS ✓ VACCINES ✓ ANTITOXINS

Third Floor Medico-Dental Bldg.
Post and Mason Streets
Telephones: GArfield 0265-0266

California and Steiner Streets
Telephones: WEst 0558-0559
Fourth Floor, 450 Sutter
Telephones: GArfield 4486-4487

Second Floor, Fitzhugh Bldg.
Post and Powell Streets
Telephones: GArfield 4417-4418-4419-4420-4421-4422

LAS ENCINAS - - - PASADENA, CALIF.
A SANITARIUM FOR THE TREATMENT OF GENERAL AND NERVOUS DISEASES
Board of Directors: GEORGE DOCK, M. D., *President;* W. JARVIS BARLOW, M. D.; STEPHEN SMITH, M. D.; CHARLES W. THOMPSON, M. D.; GEORGE HUNTER, M. D.
Address: STEPHEN SMITH, M. D., F. A. C. P., or CHARLES W. THOMPSON, M. D., F. A. C. P., Medical Directors
LAS ENCINAS, PASADENA, CALIFORNIA

Medicinal Research at Mellon Institute.—Since 1922 the firm of E. R. Squibb & Sons of New York, New York, has been sustaining research at Mellon Institute, Pittsburgh, Pennsylvania. For the most part, this investigational work has been concerned with the development of new medicinal preparations; in addition, the Fellowship has been collaborating with specialists on the faculty of the School of Dentistry of the University of Pittsburgh in studies of dental therapeutic agents.

According to an announcement of Mellon Institute, the Squibb Fellowship has lately been renewed for the year July 1, 1933, to July 1, 1934, to continue this program of pharmaceutical research, and Dr. Harold William Coles has been appointed to the incumbency of this Fellowship. Doctor Coles, who received his professional education at Syracuse University (B. S., 1923) and at the Iowa State College (M. S., 1926; Ph. D., 1927), is a specialist in the pharmacology and physiology of local anesthetics. He has also contributed to the literature of the chemistry and fermentation of sugar derivatives, organic antimony compounds, and ephedrin intermediates. Prior to joining Mellon Institute, he was for six years engaged in organic research in the pharmaceutical field.

In connection with the investigations of the Squibb Fellowship, as they will relate to the field of dentistry, Dr. H. Edmund Friesell, dean, School of Dentistry, University of Pittsburgh, will continue to act as one of the Fellowship advisers. Doctor Friesell has served in this positional capacity for over ten years, participating actively in the Fellowship's studies in the province of fundamental dental medicine.

The most important quality of education is flexibility. Flexibility is allied to play. Play is the essence of adaptability, and there is no prescribed pattern for it. Opportunities must be used as they come along. (Boyd H. Bode, 1932).—*Weekly Bulletin, California Department of Public Health.*

Dewar & Hare Electric Co.
Manufacturers and Distributors
X-Ray and Physiotherapy Equipment
and
Aurora X-Ray Corporation Products
X-Ray Apparatus ✓ Quartz Ultra Violet Lamps
Infra Red Lamps ✓ Accessories
"Thermotax" Diathermy ✓ "Electrotax" Sine Wave
386 SEVENTEENTH STREET, *near Franklin St.*
Telephone GLencourt 9273 Oakland, California

A San Francisco Organization
Shumate Drug Company
DISPENSING CHEMISTS
Catering to the Medical Profession
Since 1890

Officers of Scientific Sections of California Medical Association

Anesthesiology

Chairman, John Miller Wilson, 605 Professional Building, Pasadena.
Secretary, Ethel Righetti, 319 Walnut Street, San Francisco.

Dermatology and Syphilology

Chairman, Louis F. X. Wilhelm, 410 California Medical Building, 1401 South Hope Street, Los Angeles.
Vice-Chairman, C. E. Schoff, 322 Medico-Dental Building, 1127 Eleventh Street, Sacramento.
Secretary, Philip K. Allen, 314 Medico-Dental Building, 233 A Street, San Diego.

Eye, Ear, Nose and Throat

Chairman, J. Roy Jones, 2138 Third Avenue, Sacramento.
Vice-Chairman, Harold A. Fletcher, 1440 Medico-Dental Building, 490 Post Street, San Francisco.
Secretary, Samuel A. Durr, 1304 Medico-Dental Building, 233 A Street, San Diego.

General Medicine

Chairman, Fred H. Kruse, 916 Fitzhugh Building, 384 Post Street, San Francisco.
Secretary, Hilmar O. Koefod, 1421 State Street, Santa Barbara.

General Surgery

Chairman, Joseph K. Swindt, 546 Investment Building, Pomona.
Secretary, Edwin M. Taylor, 230 Grand Avenue, Oakland.
Assistant Secretary, William P. Kroger, 902 Wilshire Medical Building, 1930 Wilshire Boulevard, Los Angeles.

Industrial Medicine and Surgery

Chairman, John J. Loutzenheiser, Union Square Building, 350 Post Street, San Francisco.
Secretary, J. Minton Meherin, 507 Union Square Building, 350 Post Street, San Francisco.

Neuropsychiatry

Chairman, Clifford W. Mack, Livermore Sanitarium, Livermore.
Vice-Chairman, Helen Hopkins, 925 Pacific Mutual Building, 523 W. Sixth Street, Los Angeles.
Secretary, H. Douglas Eaton, 811 Medical Office Building, 1136 West Sixth Street, Los Angeles.

Obstetrics and Gynecology

Chairman, Alice F. Maxwell, University of California Hospital, Fourth and Parnassus Avenues, San Francisco.
Vice-Chairman, Emil F. Krahulik, 1021 Taft Building, 1680 N. Vine Street, Hollywood.
Secretary, H. A. Stephenson, 521 Medico-Dental Building, 490 Post Street, San Francisco.

Pathology and Bacteriology

Chairman, George D. Maner, Wilshire Medical Building, 1930 Wilshire Boulevard, Los Angeles.
Secretary, Emil Bogen, Olive View Sanitarium, Olive View.
Assistant Secretary, Zera E. Bolin, 450 Sutter Street, San Francisco.

Pediatrics

Chairman, Francis S. Smyth, University of California Hospital, Fourth and Parnassus Avenues, San Francisco.
Secretary, Henry E. Stafford, 242 Moss Avenue, Oakland.
Assistant Secretary, Sam J. McClendon, 2001 Fourth Street, San Diego.

Radiology

Chairman, Robert S. Stone, University of California Hospital, Fourth and Parnassus Avenues, San Francisco.
Secretary, Kenneth S. Davis, St. Vincent's Hospital, 2131 Ocean View Boulevard, Los Angeles.

Urology

Chairman, Lewis Michelson, 434 Medico-Dental Building, 490 Post Street, San Francisco.
Secretary, George F. Schenck, 308 Wilshire Medical Building, 1930 Wilshire Boulevard, Los Angeles.

Officers of County Medical Associations

Alameda County Medical Association
2404 Broadway, Oakland

President, Dexter N. Richards, 400 29th St., Oakland.
Secretary, Gertrude Moore, 2404 Broadway, Oakland.

Butte County Medical Society

President, Dan H. Moulton, Box 520, Chico.
Secretary, J. O. Chiapella, Chiapella Building, Chico.

Contra Costa County Medical Society

President, L. H. Fraser, American Trust Bldg., Richmond.
Secretary, Clara H. Spalding, 331 Eighth Street, Richmond.

Fresno County Medical Society

President, Elmer J. Schmidt, 612 T. W. Patterson Building, Fresno.
Secretary, Neil J. Dau, 1111 Fulton St., Fresno.

Humboldt County Medical Society

President, Lane Falk, 507 F Street, Eureka.
Secretary, L. A. Wing, Eureka.

Imperial County Medical Society

President, John L. Parker, Brawley.
Secretary, George C. Holleran, Brawley.

Kern County Medical Society

President, Perryman F. Page, Box 426, Taft.
Secretary, Seymour Strongin, San Joaquin Hospital, Bakersfield.

Kings County Medical Society

President, C. G. Newbecker, Hanford.
Secretary, Benjamin H. Pratt, First National Bank Building, Lemoore.

Lassen-Plumas County Medical Society

President, Bert J. Lasswell, Quincy.
Secretary, C. I. Burnett, Knoch Building, Susanville.

Los Angeles County Medical Association
1925 Wilshire Boulevard

President, Charles T. Sturgeon, 1930 Wilshire Boulevard, Los Angeles.
Secretary, Harry H. Wilson, 1925 Wilshire Boulevard, Los Angeles.

Marin County Medical Society

President, John H. Kuser, Cheda Building, San Rafael.
Secretary, Carl W. Clark, Albert Building, San Rafael.

Mendocino County Medical Society

President, R. A. Babcock, Willits.
Secretary, Paul J. Bowman, Fort Bragg.

Merced County Medical Society

President, B. E. McDowell, Bank of Italy Building, Merced.
Secretary, Fred O. Lien, Shaffer Building, Merced.

Monterey County Medical Society

President, R. M. Fortier, 2 McDougall Building, Salinas.
Secretary, John A. Merrill, 308 Spazier Building, Monterey.

Napa County Medical Society

President, C. A. Johnson, Gordon Building, Napa.
Secretary, M. M. Booth, 1379 Main Street, St. Helena.

Orange County Medical Society

President, William S. Wallace, 207 W. Chapman Street, Orange.
Secretary, Waldo S. Wehrly, 620 N. Main Street, Santa Ana.

Placer County Medical Society

President, L. B. Barnes, Newcastle.
Secretary, R. A. Peers, Colfax.

Riverside County Medical Society

President, Hervey S. Farris, 3616 Main Street, Riverside.
Secretary, T. A. Card, Glenwood Block, Riverside.

Sacramento Society for Medical Improvement

President, George A. Briggs, 409 Farmers and Mechanics Bank Bldg., Sacramento.
Secretary, Frank W. Lee, 510 Physicians Building, 1027 Tenth Street, Sacramento.

San Benito County Medical Society

President, L. C. Hull, Hollister.
Secretary, L. E. Smith, Hollister.

San Bernardino County Medical Society

President, Fred B. Moor, Loma Linda.
Secretary, E. J. Eytinge, 47 East Vine Street, Redlands.

San Diego County Medical Society
Fourteenth Floor, Medico-Dental Building.
233 A Street, San Diego

President, Clair L. Stealy, 2001 Fourth St., San Diego.
Secretary, William H. Geistweit, Jr., 810 Medico-Dental Building, 233 A Street, San Diego.

San Francisco County Medical Society
2180 Washington Street, San Francisco

President, Karl L. Schaupp, 530 Medico-Dental Bldg., 490 Post St., San Francisco.
Secretary, Mary Jones-Mentzer, 2180 Washington St., San Francisco.

San Joaquin County Medical Society

President, J. F. Doughty, 231 W. 11th St., Tracy.
Secretary, C. A. Broaddus, 907 Medico-Dental Building, 242 North Sutter Street, Stockton.

San Luis Obispo County Medical Society

President, W. D. Butler, 1114 Chorro Street, San Luis Obispo.
Secretary, Allen F. Gillihan, San Luis Obispo.

San Mateo County Medical Society

President, Benjamin H. Page, 231 Second Avenue, San Mateo.
Secretary, H. H. Ray, 23 Second Avenue, San Mateo.

(Roster lists continued on advertising page 6)

Santa Barbara County Medical Society

President, M. J. Geyman, 1520 Chapala Street, Santa Barbara.
Secretary, William H. Eaton, Health Department, Santa Barbara.

Santa Clara County Medical Society

President, George L. Barry, 700 Medico-Dental Building, San Jose.
Secretary, E. O. G. Schmitt, 608 Medico-Dental Building, San Jose.

Santa Cruz County Medical Society

President, O. C. Marshall, New Register Building, Watsonville.
Secretary, Samuel B. Randall, Farmers and Merchants Natl. Bank Bldg., Santa Cruz.

Shasta County Medical Society

President, Earnest Dozier, Masonic Building, Redding.
Secretary, F. H. Olberg. Craddock Building, Redding.

Siskiyou County Medical Society

President, W. E. Hart, Yreka.
Secretary, Joseph Langer, Hilt.

Solano County Medical Society

President, Philip B. Fry, Benicia.
Secretary, John W. Green, 427 Sacramento Street, Vallejo.

Sonoma County Medical Society

President, Mark L. Lewis, 41 Main Street, Petaluma.
Secretary, W. C. Shipley, 206 Rosenberg Building, Santa Rosa.

Stanislaus County Medical Society

President, Donald L. Robertson, 1003 12th Street, Modesto.
Secretary, J. A. Porter, 209 Beaty Bldg., 1024 J St., Modesto.

Tehama County Medical Society

President, F. L. Doane, Red Bluff.
Secretary, F. J. Bailey, Red Bluff.

Tulare County Medical Society

President, Frank Kohn, County Hospital, Tulare.
Secretary, Karl F. Weiss, Security First National Bank Building, Visalia.

Ventura County Medical Society

President, F. Royal Hendricks, 620 E. Main St., Ventura.
Secretary, Wm. Felberbaum, 134 N. 10th St., Santa Paula.

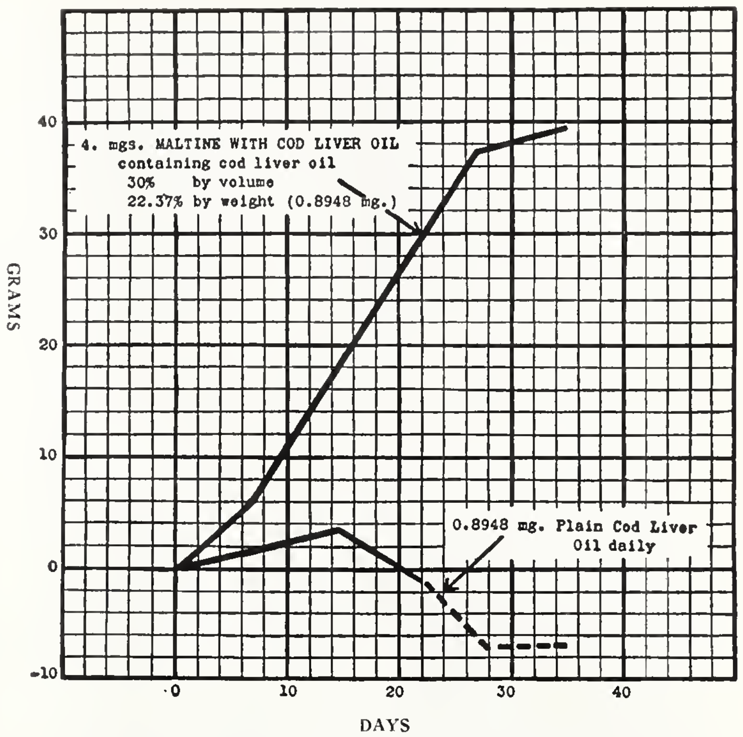
Yolo-Colusa-Glenn County Medical Society

President, Oscar C. Railsback, Woodland Clinic, Woodland.
Secretary, G. W. Desrosier, Colusa.

Yuba-Sutter County Medical Society

President, T. E. Larner, I. O. O. F. Building, Marysville.
Secretary, Fred W. Didier, Wheatland.

ENHANCING THE VITAMIN A VALUE OF COD LIVER OIL



The actual amount of cod liver oil received by the animals represented in the two curves was identical.

THE medical profession has long used and recommended cod liver oil because of its therapeutic value in diseases and ailments of various types. More than 50 years ago, The Maltine Company, realizing the nutritive value of cod liver oil, studied the possibility of incorporating this oil in a concentrated malt extract, hoping thereby to increase the palatability of the oil and to make available to the medical profession an emulsion which would combine the virtues of the two components; Maltine with Cod Liver Oil was the result.

It was found that the new Maltine with Cod Liver Oil was palatable and easily tolerated by children and adults, many of whom had previously found it difficult to take plain cod liver oil. More recently, tests of various kinds, including biological and clinical, have shown that Maltine with Cod Liver Oil has other characteristics, besides palatability, to recommend it.

One of the most recent findings is that an actual enhancement of the value of the cod liver oil occurs in the Maltine with Cod Liver Oil emulsion. This finding is of so much importance, both from the practical as well as the scientific standpoint, that we quote from the article which appeared in the January issue of the Proceedings of the Society for Experimental Biology and Medicine, reporting work done in the research laboratories of the Maltine Company.

> *"The animals fed 0.8948 mg. of cod liver oil daily in the form of the cod liver oil-malt extract emulsion* made an average gain in weight of 39.7 gm. during the 5 weeks' experimental period. Further, when xerophthalmia existed in the animals of this group at the beginning of the test period, the eye condition became decidedly improved or was entirely cured."*

In striking contrast were those animals fed plain cod liver oil and receiving the same amount of oil as occurred in the emulsion dosage. In this group xerophthalmia became more severe and many of the animals died with characteristic symptoms of Vitamin A deficiency before the end of the experimental period. This would indicate that the value of cod liver oil is enhanced when fed in the form of Maltine with Cod Liver Oil.

A chart, here illustrated, shows the average growth curves of test animals in the two groups.

Maltine with Cod Liver Oil is biologically standardized and is guaranteed to contain a generous balance of vitamins A, B, D and G. Biological and vitamin report on request. The Maltine Company, *Est.* 1875, 30 Vesey Street, New York, N. Y.

**(Maltine with Cod Liver Oil)*

Janes, E. R., Grover, H. F., and Quinn, E. J.: "A Method of Enhancing the Vitamin A Value of Cod Liver Oil," Proc. Soc. for Exper. Biol. and Med., January, 1933, p. 516.

Member NRA
We do our part

THE ORIGINAL

Maltine

WITH COD LIVER OIL

Introduced in 1875

CERTIFOODS—sieved vegetables of known and guaranteed vitamin potency. Prepared by an exclusive process which conserves maximum vitamin values, proteins, calories and mineral salts—particularly iron and phosphorus. Prepared by CERTIFOODS, Inc., subsidiary of The Maltine Company.

Woman's Auxiliary to the California Medical Association

State Auxiliary Officers

President, Mrs. Andrew Mitchell Henderson, 1600 M Street, Sacramento.

President-Elect, Mrs. Philip Schuyler Doane, 855 Oak Knoll Circle, Pasadena.

First Vice-President, Mrs. Paul A. Quaintance, 809 South Orange Drive, Los Angeles.

Second Vice-President, Mrs. Thomas Clark, 40 Ross Circle, Oakland.

Recording Secretary, Mrs. Ruggles A. Cushman, Talmage.

Corresponding Secretary, Mrs. Charles E. Von Geldern, 1325 Fortieth Street, Sacramento.

Treasurer, Mrs. F. N. Scatena, 1400 Forty-first Street, Sacramento.

Officers of County Auxiliaries

Alameda County — President, Mrs. Charles Dukes, 211 The Uplands, Oakland.

Contra Costa County—President, Mrs. U. S. Abbott, 5490 Barrett Avenue, Richmond.

Los Angeles County — President, Mrs. A. Bennett Cooke, Pasadena.

Mendocino County—Mrs. R. A. Cushman, Talmage.

Napa County—President, Mrs. W. L. Blodget, Calistoga.

Orange County—Mrs. C. S. O'Toole, Anaheim.

Riverside County — Mrs. A. W. Walker, Riverside.

Sacramento County—President, Mrs. Frederick N. Scatena, Sacramento.

San Bernardino County—President, Mrs. C. G. Hilliard, Redlands.

San Diego County—President, Mrs. Charles E. Howard, San Diego.

San Joaquin County—President, Mrs. P. B. Gallegos, Stockton.

Santa Barbara County—President, Mrs. R.T. Atsatt, Santa Barbara.

San Luis Obispo County—Mrs. Deon A. Crew, 846 Higuera Street, San Luis Obispo.

Sonoma County—President, Mrs. Henry S. Rogers, Petaluma.

Delegates and Alternates to the American Medical Association

DELEGATES		ALTERNATES
C. A. Dukes, Oakland	(1934)	Edward N. Ewer, Oakland
Carl R. Howson, Los Angeles	(1934)	Edward M. Pallette, Los Angeles
Junius B. Harris, Sacramento	(1934)	John Hunt Shepard, San Jose
William R. Molony, Sr., Los Angeles	(1934)	John C. Ruddock, Los Angeles
Elbridge Best, San Francisco	(1934-1935)	Robert S. Stone, San Francisco
Lyell C. Kinney, San Diego	(1934-1935)	Harry H. Wilson, Los Angeles
Fred B. Clarke, Long Beach	(1934-1935)	A. J. Scott, Los Angeles

Miscellaneous California Medical Organizations

California State Department of Public Health

San Francisco—State Office Building, McAllister and Larkin Streets. UNderhill 8700.

Sacramento—State Office Building, Tenth and L Streets. CApital 2800.

Los Angeles — State Office Building, 217 West First Street. MAdison 1281.

President, John H. Graves, San Francisco.

Director, Giles S. Porter, Los Angeles.

Board of Medical Examiners of the State of California

San Francisco, Rm. 512, 450 McAllister St.

Los Angeles, 812 Associated Realty Building 510 West Sixth Street

Sacramento, 420 State Office Building

President, P. T. Phillips, Santa Cruz.

Secretary, C .B. Pinkham, Room 512, 450 McAllister Street, San Francisco.

Southern California Medical Association

President, Bon O. Adams, Riverside.

Secretary, Robert W. Langley, 1002 Wilshire Medical Building, 1930 Wilshire Boulevard, Los Angeles.

California Northern District Medical Society

President, D. Schuyler Pulford, California State Life Building, Sacramento.

Secretary, Edward S. Babcock, 820 Medico-Dental Building, 1127 Eleventh Street, Sacramento.

Pacific Roentgen Club

Chairman, Lowell S. Goin, 1930 Wilshire Boulevard, Los Angeles.

Secretary, L. H. Garland, 450 Sutter Street, San Francisco.

Better Health Foundation

President, Reginald Knight Smith, 490 Post Street, San Francisco.

Chairman, Executive Committee, Walter B. Coffey, 65 Market Street, San Francisco.

Treasurer, John Gallwey, 1195 Bush Street, San Francisco.

Secretary, Celestine J. Sullivan, 490 Post Street, San Francisco.

Nevada State Medical Association

O. HOVENDEN, McGill	President
D. A. SMITH, Mina	President-elect
J. N. VAN METER, Las Vegas	First Vice-President
FLEET H. HARRISON, Minden	Second Vice-President
HORACE J. BROWN, Reno	Secretary-Treasurer
HORACE J. BROWN, Reno	Delegate
E. E. HAMER, Carson City	Alternate

Hospitals and Sanatoriums

The Institutions here listed have announcements in this issue of CALIFORNIA AND WESTERN MEDICINE. For Index, see advertising page 8.

ALEXANDER SANITARIUM
Nervous and Mild Mental Diseases
Belmont, California

CANYON SANATORIUM
For the Treatment of Tuberculosis
Redwood City, California

COLFAX SCHOOL FOR THE TUBERCULOUS
For the Treatment of Tuberculosis
Colfax, California

COMPTON SANATORIUM AND LAS CAMPANAS HOSPITAL, COMPTON
Neuropsychiatric and General

DANTE SANATORIUM
Limited General Hospital
Van Ness and Broadway, San Francisco

FRANKLIN HOSPITAL
Limited General Hospital
Fourteenth and Noe Streets, San Francisco

FRENCH HOSPITAL
General Hospital
Geary at Fifth Avenue, San Francisco

GREENS' EYE HOSPITAL
Consultation, Diagnosis and Treatment of Diseases of the Eye
Bush and Octavia Streets, San Francisco

THE GREER HOME, Inc.
Convalescent Home
6000 Fulton Street, San Francisco

LAS ENCINAS SANITARIUM
Nervous and General Diseases
Las Encinas, Pasadena, California

LIVERMORE SANITARIUM
Nervous and General Diseases
Livermore, California

OAKS SANITARIUM
For Treatment of Tuberculosis
Los Gatos, California

POTTENGER SANATORIUM AND CLINIC
For the Treatment of Tuberculosis
Monrovia, California

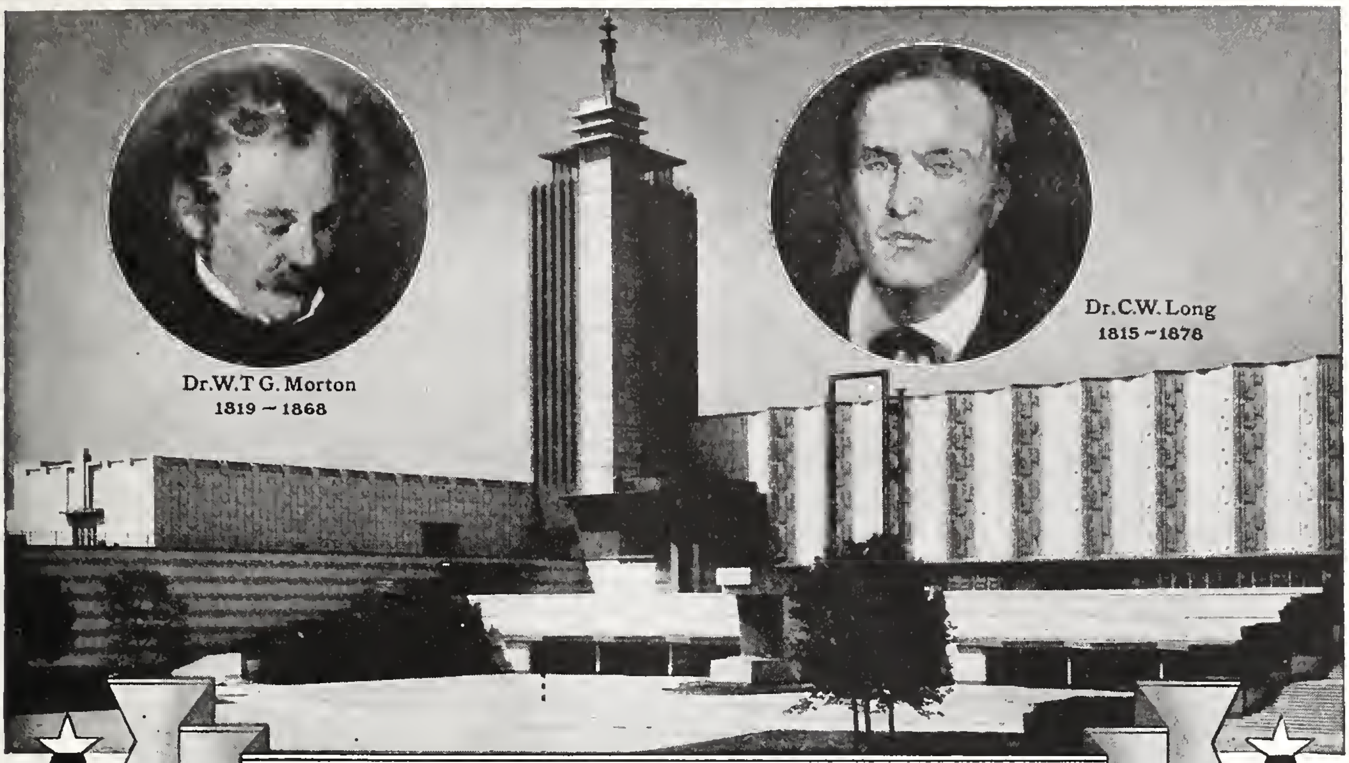
ST. CHARLES SANITARIUM
Mental and Nervous, Alcoholic and Drug Addictions
1500 Page Street, San Francisco, California

SAINT FRANCIS HOSPITAL
Limited General Hospital
Bush and Hyde Streets, San Francisco

ST. LUKE'S HOSPITAL
Limited General Hospital
27th and Valencia Streets, San Francisco

ST. MARY'S HOSPITAL
General Hospital
2200 Hayes Street, San Francisco

SOUTHERN SIERRAS SANATORIUM
Scientific Treatment of Tuberculosis
Banning, California



A CENTURY OF PROGRESS
IN SEVENTY-FIVE YEARS

SQUIBB ETHER

The only anesthetic ether packaged in copper-lined containers to prevent the formation of oxidation by-products

When surgery becomes necessary, choose that ether which long and wide experience has proved to be the safest, purest and most effective ether for surgical use. Choose Squibb's—the world's standard anesthetic ether.

For further information about Squibb Ether mail the coupon below

If you are planning to attend the Century of Progress Exposition we cordially invite you to visit the Squibb Exhibit on the ground floor of the Hall of Science Building

NRA
MEMBER
U.S.
WE DO OUR PART

E. R. SQUIBB & SONS, Anesthetic Department,
3209 Squibb Building, New York City.

Please send me a copy of your booklet on Open Ether Anesthesia ☐. I would also like a copy of your booklet on Spinal Anesthesia ☐. Ether-Oil Squibb ☐.

Name ....

Street ....

City...................... State..........

ALPHABETICAL LIST OF ADVERTISERS

Members of the California Medical Association can aid their Journal and the firms who advertise therein, by coöperation as indicated in the footnote on this page

PAGE

Alexander Sanitarium.... 38
Aloe Co., A. S.... 11
Approved Clinica Laboratories.... 12

Barry Co., The James H.... 23
Borden Co., The.... 19
Broemmel's Prescription Pharmacies.... 3
Bush Electric Corporation.... 1

California Lima Bean Growers' Association.... 26
Calso Water Co.... 30
Camp Co., S. H.... 24
Canyon Sanitarium.... 35
Certified Laboratory Products.... 37
Chesterfield Cigarettes.... 27
Chicago Eye, Ear, Nose and Throat Hospital.... 9
Classified Advertisements.... 10
Colfax School for the Tuberculous.... 40
Compton Sanitarium and Las Campanas Hospital.... 24
Cutter Laboratory.... 4 Cover

Dante Sanatorium.... 14
Dewar & Hare Electric Co.... 3
Diederich Optical Co., Inc.... 28
Doctors' Business Bureau.... 34
Dry Milk Co., The.... 15

Four-Fifty Sutter.... 30
Franklin Hospital.... 22
French Hospital.... 28

Golden State Co., Ltd.... 39
Greens' Eye Hospital.... 2 Cover
Greer Home.... 9
Guth, C. Rodolph, Clinical Laboratories.... 10

Hospitals and Sanatoriums.... 6
Hotaling & Co., A. P.... 30
Hynson, Westcott & Dunning, Inc.... 38

International Medical Assembly.. 31

La Loma Feliz.... 9
Las Encinas Sanitarium.... 3
Lilly & Company, Eli.... 32
Livermore Sanitarium.... 25

Maltine Company, The.... 5
Mead Johnson & Co.... 20
Mulford Biological Laboratories.. 13

New York Polyclinic Medical School and Hospital.... 9

Oaks Sanitarium, The.... 4 Cover
Officers of the California Medical Association.... 2-4
Officers of Miscellaneous Medical Associations.... 6

Parke, Davis & Co.... 16
Park Sanitarium.... 26
Petrolagar Laboratories.... 29
Postgraduate Instruction.... 9
Pottenger Sanatorium.... 17

Ray, Frederick, Collection Specialist.... 31
Riggs Optical Company.... 36

Saint Francis Hospital.... 9
San Francisco Bank, The.... 36
Sharp & Dohme.... 13
Shumate's Prescription Pharmacies.... 3
Soiland, Albert (Radiological Clinic).... 39
Southern Sierras Sanatorium.... 18
Squibb & Sons, E. R.... 7
Sperry Flour Co., The.... 3 Cover
Stacey, J. W., Medical Books.... 11
Stuart Oxygen Co.... 33
St. Luke's Hospital.... 38
St. Mary's Hospital.... 21

Travers and Hennig, Inc.... 22
Tulane University of Louisiana Graduate School of Medicine.... 9

Walters Surgical Company.... 11

ON CO-OPERATION WITH ADVERTISERS

California and Western Medicine, the Journal of our Association, in its present form, is made possible in part because of the generous coöperation of firms who believe that its pages can successfully carry a message concerning their products to a desirable group of present and future patrons.

The five thousand and more readers of California and Western Medicine often have occasion to purchase articles advertised in this publication.

Other things being equal, it would seem that reciprocal courtesy and coöperation should lead our members to give preference to those firms who place announcements in our publication.

Coöperation might go even farther than that. When ordering goods from our advertisers, mention California and Western Medicine. By the observance of this rule, a distinct service will be given your Association, its Journal and our advertisers.

A SERVICE AGENCY—FOR READERS

The Journal of the American Medical Association and the A. M. A. Coöperative Medical Advertising Bureau of Chicago maintain a Service Department to answer inquiries from you about pharmaceuticals, surgical instruments and other manufactured products, such as soaps, clothing, automobiles, etc., which you may need in your home, office, sanitarium or hospital.

We invite and urge you to use this Service. It is absolutely *free* to every member of the California and Nevada Associations. The Coöperative Bureau is equipped with catalogues and price lists of manufacturers, and can supply you information by return mail.

Perhaps you want a certain kind of instrument which is not advertised in California and Western Medicine, and do not know where to secure it; or do not know where to obtain some automobile supplies you need. This A. M. A. Service Bureau will give you the information. Whenever possible, the goods will be advertised in our pages; but if they are not, we urge you to write direct to the Coöperative Medical Advertising Bureau, 535 N. Dearborn Street, Chicago, Illinois. California and Western Medicine and the A. M. A. Service Bureau desire to serve *you*.

The New York Polyclinic
MEDICAL SCHOOL AND HOSPITAL
(Organized 1881)
(The Pioneer Post-Graduate Medical Institution in America)

UROLOGY—Including

SURGICAL ANATOMY
CYSTOSCOPY and ENDOSCOPY
PATHOLOGY
NEUROLOGY

OPERATIVE UROLOGY (cadaver)
DIAGNOSIS and OFFICE TREATMENT
REGIONAL ANESTHESIA
MEDICINE

DERMATOLOGY and SYPHILIS
ROENTGENOLOGY
PROCTOLOGY
DIATHERMY

For information address MEDICAL EXECUTIVE OFFICER: 345 W. 50th St., New York City

SAINT FRANCIS HOSPITAL
AND
SCHOOL OF NURSING
A General Hospital With Accommodations for Three Hundred Patients

DIRECTORS

JOHN GALLWEY, M. D.
W. B. COFFEY, M. D.
THOS. E. SHUMATE, M. D.
C. R. BRICCA, M. D.

W. W. WYMORE, M. D.
JOHN H. GRAVES, M. D.
Superintendent, V. W. OLNEY

J. H. O'CONNOR, M. D.
R. K. SMITH, M. D.
H. E. MANWARING
W. H. LINFORTH

Address Communications
SAINT FRANCIS HOSPITAL
Bush and Hyde Streets *Telephone* PROSPECT 7600 San Francisco

La Loma Feliz
(HAPPY HILLSIDE)
Residential School for children handicapped by heart disease, asthma and kindred conditions.
Offers consistent medical attention and regular schooling. No tuberculous or mentally retarded children.
Situated on a ranch in the foothills near Santa Barbara. Dry equable climate by actual weather bureau observations.

P. O. Box 585
Telephone No. 22349

INA M. RICHTER, M. D.
Director

Mission Canyon Road
Santa Barbara, California

POSTGRADUATE COURSE
For Graduates in Medicine
Eye, Ear, Nose and Throat
A house doctor is appointed July 1st and Jan. 1st

LABORATORY COURSE
For Nurses and Graduates of High School
CLASSES LIMITED TO SIX
X-Ray, Basal Metabolism, Electro-cardiography and Physical Therapy

150 clinical patients daily provide material for classes. Positions with attractive salaries in hospitals and with group doctors await qualified Technicians
For particulars regarding either course write
CHICAGO EYE, EAR, NOSE AND THROAT HOSPITAL, 231 West Washington Street, Chicago, Illinois

The Tulane University of Louisiana
Graduate School of Medicine
Approved by the Council on Medical Education of the A. M. A.

POSTGRADUATE instruction offered in all branches of medicine. Courses leading to a higher degree have also been instituted.

For bulletin furnishing detailed information, apply to the . . . .
DEAN
Graduate School of Medicine
1430 Tulane Avenue New Orleans, La.

Specializing in
RECUPERATIVE AND NERVOUS CASES

Hydro-Therapeutic Treatments
Occupational Therapy Department included in weekly or monthly rates

Attractive location and recreational surroundings with absence of hospital atmosphere. Inspection invited. Only referred cases of qualified physicians accepted.

The GREER HOME, Inc.
Corner 36th Avenue and Fulton Street
SAN FRANCISCO, CALIFORNIA
Telephone EVERGREEN 9645

CLASSIFIED ADVERTISEMENTS

Rates for these insertions are $4 for fifty words or less; additional words 5 cents each.

COACHING FOR STATE BOARDS—MEDICAL AND dental. Arthur H. White, M. D., Suite 1005, Flood Building, San Francisco.

WANTED—LOCUM TENENS OR PERMANENT LOCATION in Los Angeles area. Ten years' general surgical and medical practice in western state. Age 37, married, protestant, graduate Grade A school, general internship, ethical, California licensed. Assistancy to older man considered. Address Box 910, California and Western Medicine.

FOR SALE—EYE, EAR, NOSE AND THROAT PRACTICE and equipment. Office established six years. Southern California town. Price, $1,000, for quick sale. Address Box 900, California and Western Medicine.

A New and Improved
ANTISYPHILITIC

BILIPOSOL

Trade Mark, Reg. U. S. Pat. Off.

A clear oil solution soluble in body lipoids. Prepared under the strict supervision and control of Dr. C. Levaditi of the Pasteur Institute, Paris.

More rapidly absorbed from the site of injection than insoluble bismuth salts, yet slowly eliminated.

ACCEPTED
AMERICAN MEDICAL ASSN
Council on Pharmacy and Chemistry

BOXES OF 12 AMPOULES

C. RODOLPH GUTH
BIOLOGICS & THERAPEUTIC SPECIALTIES
WILLIAM H. BANKS, M. D., *Medical Director*
PHONE KEARNY 3644
811 Flood Bldg. San Francisco, Calif.
ASSOCIATED WITH
FRATES & LOVOTTI, PROFESSIONAL PHARMACISTS

Surgical Knives and Centuries of Progress.—Visitors to Chicago's great World's Fair, especially if they are medically or surgically minded, will pause in their peregrinations with a great deal of interest before an attractive glass case which houses the exhibit of the Bard-Parker Company of Danbury, Connecticut. Here they will see a unique display—not only one, but sixty centuries of progress in the evolution of the surgical cutting surface.

A great deal of time and thought have been put into making this exhibit a historical story, told succinctly and impressively. Flint knives, in replica, dating back to the Neolithic Age, when sharp shells and dagger-like sharks' teeth were used as the only means of controlled cutting; knives with the impress of Pompeii and Herculaneum stamped all over them, the folding bistouries of Paré, the famous French surgeon of the sixteenth century—all vie for the interest of the visiting guest with the beautiful, modern detachable blades of the superinstrument of today.

One looks at this display with conflicting emotions. It comes to him forcefully that the science of surgery has progressed far since these early days; that the man of today must be eternally grateful to those few earnest physicians and instrument makers who have toiled incessantly to perfect the keenly sharp, clean-cutting edge which the modern surgeon uses with almost a nonchalance.

Knives of all surgical uses are shown chronologically, giving an understanding picture of the tremendous progress made in this little known but important humanitarian industry. And, finally, one comes to the two types of one-piece surgical knife used in the twentieth century—the knife that has been superseded by the ultramodern, detachable blade knife of today, made by the Bard-Parker Company with the utmost precision and care, and used almost universally in the leading hospitals of the world. Even the marked improvement of this detachable blade knife over the almost modern, one-piece surgical knife will cause one to wonder, and he will turn to the study of the Bard-Parker blade with more than passing interest.

The Bard-Parker detachable blade knife—the standard surgical knife of today—incorporates the safety razor principle, and finally supersedes the one-piece surgical knife accepted for six thousand years. The detachable blade eliminates resharpening—a difficult problem to the hospital—and provides razor-sharp blades. A dull blade is simply and easily removed and replaced in a jiffy with a new, keen blade which is uniformly sharp. Their new, modern knives are shown in all sizes and shapes, and form a marvelous contrast to the more or less clumsy instruments which have come up from antiquity.

The visitor may get the brilliant idea, why not detachable blade scissors? from his perusal of this interesting exhibit. The answer is in the case, the latest development of the art of surgical instrument making. Bard-Parker renewable edge surgical scissors will appeal at once on the score of practicability alone. They are the natural outcome of the surgical knife with detachable blades. Their advantages are obvious. They eliminate regrinding and insure uniformly sharp cutting edges. Furthermore, they outlast other scissors because they are not worn out by repeated grindings.

And so, the exhibit of the Bard-Parker Company will afford everyone an interesting and instructive few minutes at the Century of Progress Exposition. It should be sought out particularly. It will be found as a prominent part of the display of V. Mueller & Co., by whose kindness it is available, on the ground floor of the Hall of Science, where a sparkling pool makes a cool and pleasing rotunda.

Consequently, instead of nearly everyone being infected we now find decreasing proportions of the population giving evidence of having taken in the germs. This is demonstrated by the use of the tuberculin test, which is a perfectly harmless skin test and which, when positive, indicates the presence of tuberculosis infection in the body. With this test it is proved that in a typical American community children between five and fifteen years of age now give only 25 to 30 per cent positive reactions. (Dr. Donald B. Armstrong.) — *Weekly Bulletin, California Department of Public Health.*

BOOK REVIEWS

List of Books Received

BOOKS RECEIVED

Obstetrics and Gynecology. Volume II. By eighty leading specialists. Edited by Arthur Hale Curtis, M. D., Professor and Head of the Department of Obstetrics and Gynecology, Northwestern University Medical School; Chief of the Gynecologic Service Passavant Memorial Hospital, Chicago, Illinois. Complete in three volumes and separate desk index. Cloth. Pp. 1135, with 1664 illustrations, many in colors. Price, $35 net per set. Philadelphia and London: W. B. Saunders Company, 1933.

Essentials of Prescription Writing. By Cary Eggleston, M. D., Assistant Professor of Clinical Medicine, Cornell University Medical College, New York City. Fifth Edition, Revised. Cloth. Pp. 155. Price, $1.50 net. Philadelphia and London: W. B. Saunders Company, 1933.

Proceedings of the First International Congress on Mental Hygiene. Held at Washington, D. C., U. S. A., May 5 to 10, 1930. Edited by Frankwood E. Williams, M. D. Volumes I and II. Paper. Pp. 1650, total of two volumes. New York: The International Committee for Mental Hygiene, Inc. 1932.

The Story of Childbirth. By Dr. Palmer Findley. Cloth. Pp. 376, with many illustrations. Price, $3. New York: Doubleday, Doran & Company, Inc. 1933.

Obstetrics and Gynecology. Edited by Arthur Hale Curtis. Vol. 1. Pp. 1165. Illustrated. Philadelphia and London: W. B. Saunders Company. 1933. Set of three volumes, $35.

Prepared under the editorship of Arthur H. Curtis and representative of a vast outlay of effort on the part of a number of well-known obstetricians and gynecologists, this book has many of the qualities that distinguish the great Handbücher published in the German language. It is indeed a monumental piece of work, and a splendid contribution to the literature of obstetrics. Unfortunately, it seems futile to attempt to give an adequate account of its contents within the limits of a brief review. Let it suffice to say, then, that to all persons who are interested in the science and art of obstetrics this book would seem to be indispensable, if only for two reasons, namely, first, because of the wealth of valuable information it contains, and, second, because of the fact that each of the subjects dealt with is presented in such a manner as to be virtually complete within itself. The book is well written and generously supplied with illustrations, besides being a fine example of typography. In a word, it is in every respect thoroughly creditable both to its authors and to the publishers. L. A. E.

A General History of Nursing. By Lucy Ridgely Seymer. Pp. 317. Illustrated. New York: The Macmillan Company. 1933. Price, $2.75.

Revised by Nina D. Gage for publication in America, this book should be of interest to almost any medical man because it outlines the history of a profession which, perhaps more than any other one, is closely allied to his own.

Though a circumstance too familiar to cause surprise, it is, nevertheless, gratifying to read about the great improvement that has taken place during the past eighty years in the status of the trained nurse. But that the nurse's calling has reached a high level of dignity and importance no better proof could be asked than that to be had by comparing the educational standards of the present day with those of the recent past; for while, within the last decade, it has been possible for a student nurse to obtain a diploma after a single year of undergraduate instruction, at present, in some of the university training schools, the courses extend over a period of five years and lead ultimately to the degree, Bachelor of Nursing.

Concerning the general history of the nursing movement, the author stresses the importance of the religious motive, pointing out that the earliest known methods of caring for the sick were devised by members of various ecclesiastical orders, whether by cloistered nuns or by monks. Indeed, from the evidence adduced, it would seem on the whole that the art of nursing has reached its present high state of development largely through the influence of two principal forces. Of these, beyond a doubt, one is the impelling force of Christianity, a natural

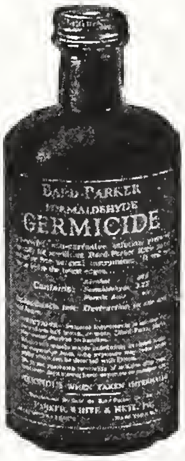
(Continued on Next Page)

NEW - - **BOOKS** - - NEW

Fishbein: Frontiers of Medicine $1.00
Brain: Diseases of the Nervous System . . 8.75
Chapin & Royster: Pediatrics 7.00
Harington: The Thyroid Gland 4.50
Hutchison & Mottram: Food and Dietetics . 5.50

Books gladly sent on approval

J. W. STACEY, INC.
Medical and Scientific Books
GArfield 0838
236-238 Flood Bldg. San Francisco

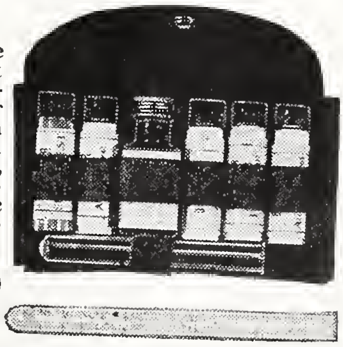


Physicians'
Surgeons' and
Hospital Supplies

WALTERS
SURGICAL COMPANY
521 Sutter Street
SAN FRANCISCO
GArfield 7995

NEW!
DUNKLER URINE TEST KIT
6 TESTS

Dunkler Urine Tests in Compact Case, including reagents for Sugar (Qual.), Albumin (Qual.), Albumin (Quant.), Acetone, Bacterial Infection, and Chronic Interstitial Nephritis with Testometer, only $5.00



All Tests Completed In One-Half To Eight Minutes

This is a scientific, tested product that will save the practitioner valuable time and money with greater accuracy in his urinary analysis. These new reagents require No Boiling, Corrosive Acids or the use of a Microscope. It is a rapid, exact, easy and scientific method for the examination of urine. The simplicity of the procedure and the reliability of the reactions will astound you. The products will not deteriorate with age or climatic changes. The cost per test is about one-half cent.

A. S. ALOE CO.
932 S. Hill St. LOS ANGELES, CAL.

APPROVED CLINICAL PATHOLOGISTS

American Medical Association Essentials for An Approved Clinical Pathologist

An approved clinical pathologist should be a licensed graduate of medicine. He shall have specialized in clinical pathology, bacteriology, pathology, chemistry, and other allied subjects for at least three years, and he should be reasonably familiar with the manifestations of disease in the body. The director of a clinical laboratory shall be on full time or have definite hours of attendance, devoting the major part of his time to this specialty. A clinical laboratory is an institution organized for the practical application of the fundamental sciences by the use of specialized apparatus, equipment and methods, for the purpose of ascertaining the presence, nature, source, and progress of disease in the human body.

The following Clinical Pathologists directing private laboratories in California are approved by the Council on Medical Education and Hospitals of the American Medical Association:

Clinical Laboratory of Drs. W. V. Brem, A. H. Zeiler, Roy W. Hammack and G. D. Maner, Pacific Mutual Building, Los Angeles, California.

Zera E. Bolin, M. D., 450 Sutter Street, San Francisco, California. ✓ ✓ ✓

These laboratories use standard methods and are fully equipped to make all clinical examinations of recognized value in: **Tissue Pathology, Bacteriology, Hematology, Serology, Bio-Chemistry, Kolmer Wassermanns, Kahn test, Medico-legal, Basal metabolism, Blood chemistry, Hormone Test for Pregnancy, Parasitology, Cardiology, Autogenous vaccines, etc.**

Mailing containers sent on request. Special delivery postage insures prompt, accurate service.

BOOK REVIEWS

(Continued from Preceding Page)

expression of which is the desire to serve the unfortunate; while the other still lives in the teachings and career of Florence Nightingale, of whose dramatic rise to popularity and of whose influence upon the development of modern nursing practice this book gives a most vivid account.

In the latter half of the volume much valuable information is supplied concerning the professional activities of the trained nurse in various special types of work. A useful bibliography is appended. G. McK. T.

Injuries of the Eye, Diagnosis and Treatment, Forensic Procedures, and Visual Economics. By Harry Vanderbilt Wurdemann. Second edition. Pp. 900. Illustrated. St. Louis: The C. V. Mosby Company. 1932. Price, $13.50.

A second edition of the author's original work, published in 1912, this book is intended to be an exhaustive treatise upon injuries of the eye. The author seems to have covered the field extremely well, having described almost every imaginable type of injury. In so doing he has grouped the injuries not only as to the causative factors (e. g., into mechanical, chemical, medicinal, or operative, etc.), but also as regards their relation to the special structures of the eye. Profusely illustrated, and liberally supplied with case histories, the book seems nearly to fulfill the author's wish that any practitioner who consults it for information about the treatment of an injured eye may find a helpful case history and illustration, together with the proper therapeutic procedure to be adopted.

The book is divided into three parts. In the first part the author describes various types of injuries to the eyes, such as contusions, perforating wounds, etc., discussing in each instance the mechanism involved and the subsequent complications to be expected. Several chapters are devoted to the technique of examining the various tissues of the eye in order to determine the site of injury or the presence of a foreign body. Here the author makes the astounding declaration that the slit lamp is of no particular service in such an examination. It is hardly conceivable, however, that any ophthalmologist who is at all familiar with the slit lamp will agree with this statement.

Adequate attention is paid to the technique of the roentgen localization of intra-ocular foreign bodies.

In part two, the author considers in great detail injuries that concern various special structures of the eye, such as the conjunctiva, the cornea, and the iris. This part of the work is profusely illustrated.

The third, and last part of the book, supplies information about medico-legal problems, protective legislation, workingmen's compensation laws, industrial insurance and other nontechnical matters. D. K. P.

International Clinics. Volume II. Forty-third Series. Pp. 314. Illustrated. Philadelphia: J. B. Lippincott Company. 1933.

This volume brings together a series of articles on the general subjects of medicine, surgery, therapeutics, roentgenology, and clinical pathology.

As might be expected, the contributions are beautifully presented and fully sustain the enviable reputation the international clinics have enjoyed in this respect for a long term of years. Three articles may be mentioned as being of especial interest to the general practitioner because of their objectivity. These are the clinical-pathological conferences on two cases of endocarditis, reported by Hamman and Rich, Waters' study on the roentgen diagnosis of interlobar pleurisy, and Wilder's paper on hyperinsulinism. Indeed it is no exaggeration to say that these three contributions alone are richly worth the modest purchase price of the book. On the other hand, though undoubtedly they are worthy of serious consideration, the seven articles on various pathologic states of the circulatory system seem, relatively speaking, to be of little more than ephemeral interest, since they concern obscure vital mechanism about which, as yet, we possess but a limited store of established facts.

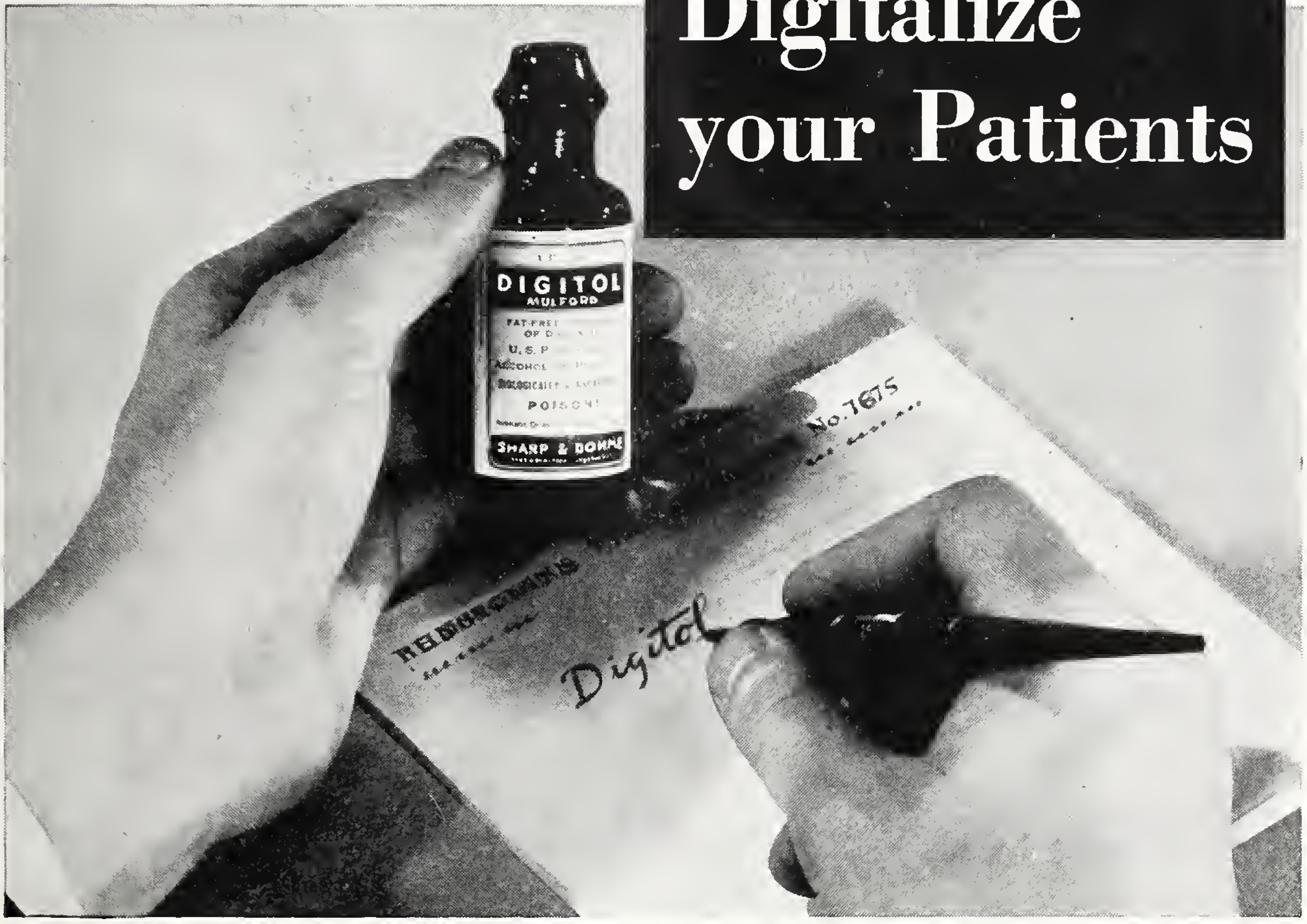
From a literary point of view, it may be added that the book is ably edited and notable throughout for its sustained charm of style.

Gastric Anacidity—Its Relation to Disease. By Arthur L. Bloomfield and W. Scott Polland. Pp. 188. New York: The Macmillan Company. 1933. Price, $2.50.

This scholarly work on gastric anacidity presents in orderly sequence an array of objective data such as could only be obtained in a modern clinical laboratory. As a rule the titrations for acidity were done on materials procured, under controlled experimental conditions, from patients who had received preliminary injections of histamin. The monograph is based largely on experimental findings secured by the authors themselves, though it also embodies a considerable number of pertinent facts established by other workers. Concerning the value of

(Continued on Page 14)

When you Digitalize your Patients



WHEN you prescribe digitalis, you expect dependability and uniformity. That is why Digitol-Mulford is so universally prescribed.

Digitol is both dependable and uniform; with it, you can standardize your digitalis expectation.

Digitol itself is standardized biologically to a definite uniformity of potency.

It carries the date of biological test on the label. Although digitalis preparations show a small loss in activity upon aging, Digitol may be safely administered after one year or longer by slight adjustment of the dosage.

Digitol-Mulford (Fat-Free Tincture of Digitalis) has been increasingly prescribed by the medical profession. It is offered only in one-ounce sealed containers supplied with a dropper for ease of administration.

ACCEPTED
AMERICAN MEDICAL ASSN
Council on Pharmacy and Chemistry

Sharp & Dohme

PHARMACEUTICALS BIOLOGICALS

PHILADELPHIA BALTIMORE MONTREAL

DANTE SANATORIUM
Known for the High Standard of Cuisine and Service
Broadway and Van Ness Avenue
SAN FRANCISCO CALIFORNIA
Edward A. Trenkle, *Managing Director* *Telephone* GRaystone 1200

BOOK REVIEWS

(Continued from Page 12)

this publication, the least that can be said is that it elucidates to a very considerable extent a subject about which comparatively little is known.

The book is divided into twelve chapters. The first two, in turn, deal with methods of testing for gastric acidity and with the historical background of this subject. Then follow four chapters in which are set forth the laboratory findings characteristic, respectively, of the true and the false types of achylia, while the remainder of the book is given over to critical discussions of the interrelationships that seem to exist between gastric anacidity and morbid processes in other parts of the body. Although all of the data brought together in this book are intrinsically valuable, unquestionably the feature of major interest is the chain of evidence presented in chapters three to seven, both inclusive, which culminates in an able summing up of the present state of our knowledge in regard to the etiology of pernicious anemia. However, as evidence of the rapid rate at which new facts are being brought to light, nowadays, through the study of gastric anacidity, it is significant that reference is made in this work neither to the polyneuritis of pregnancy nor to the seeming relationship that exists between the so-called "intrinsic factor" and the "B" series of antineuritic vitamins.

Diseases of Tradesmen. By Bernardino Ramazzini, compiled by Herman Goodman. With which is bound **Silk Handlers' Disease** by Herman Goodman. Pp. 95. New York: Medical Lay Press. 1933. Price, $1.50.

In issuing a translation of Bernardino Ramazzini's work on diseases of tradesmen, Dr. Herman Goodman has rendered the medical public obliged to him for drawing its attention to this witty and learned Italian, and also for a clear description of his own investigation of silk handlers' diseases of the skin.

Ramazzini's work is written in such an engaging way and contains so many remarks applicable to a physician's daily work that it alone is well worth attentive perusal.

The author was evidently an enthusiast in looking up the inconveniences suffered by people working in the different trades, and he had a real love for the human being, and especially for those who were ailing. For instance, he advises against any appearance of hurry in attending even the very poor, and not to immediately feel the pulse and then to stand in a transient attitude while writing a prescription. The physician should quietly ask what uneasiness the sufferer is under, what is its presumable cause, how many days it has endured, the condition of his belly, and what food he eats. To which should be added what trade he pursues. We all know how important it is if a man be a grocer, to be assured that he has not the habit of picking at the food displayed, and I, myself, well remember the case of a butcher with an intractable disease of the skin, in the treatment of which I was making no headway whatever until I discovered that he had a habit, while cutting meat, of slicing off a thin piece for himself, constituting a bad case of overeating continuously pursued throughout the day. The patient was unaware of this until his attention was drawn to it, and this is so often the case also with the noxious agents in tradesmen's diseases—they are often quite unaware of what is really causing their trouble.

In Ramazzini's day mercury poisoning was very frequent, due to overtreatment. In fact salivation was striven for under the mistaken notion that the disease was in this way being eliminated.

Mercurial intoxication occurred among those engaged in gilding silver and brasswork, and Ramazzini mentions also the brilliant staining of the beard and hair seen in copper workers. He mentions the constitutional troubles of the lead workers and, incidentally, he refers to another evil which pinches these men sorely—extreme poverty—for which the Medicina Pauperum is quite in place.

Ramazzini's faith in the efficacy of drugs and in the efficiency of druggists is evinced by his not proposing any remedy whatever for any injuries sustained by them in the way of their profession, seeing that they have under their hand, and know how to employ, good and effectual remedies for any inconveniences suffered. Having so dismissed the apothecaries, he goes on to consider other industries. However, he speaks of a druggist who acquired an irritation of the privates from handling herbs and then his own privates.

The objection of work people to autopsies is highly entertaining. If a doctor shows a desire for such an investigation, they tax him with being ignorant of the disease from which the patient died, and with seeking to rectify his knowledge by rummaging in his bowels after death.

It is interesting to note how keenly Ramazzini felt the importance and the exhilarating effect and the hygienic advantage of clean clothing and frequent bathing for those exposed to noxious fumes or dust. And here we may mention that one of the most beneficent hygienic

(Continued on Page 17)

In the Successful Treatment of

MUCOUS COLITIS

Where Diarrhea is either continuous or intermittent, and as many as 20 to 30 stools daily may be passed—stools which always contain the pathologic triad of feces, that is, blood, mucus and pus, and frequently consist almost entirely of this material—

Where Varying With Severity, the condition may grow progressively worse to debility and emaciation, with progressive anemia and irregular periods of pyrexia and where death from the condition is not at all infrequent—

An Eminent Authority Has Found that infants require but little feeding during the acute stage, after which he puts the baby on DRYCO:

"I put the baby on small quantities of Dryco, full strength, and gradually increased the amount of each feeding as the child improved and could take more. No vomiting occurred after the dextrose and buffer salts were given. With three days of Dryco feeding, the stools became of a normal consistency and were free of mucus. The appetite rapidly returned." *(Arch. Pediat.,* Vol. XLIX, No. 2, Feb., 1932).

DRYCO is digested and assimilated when other foods fail and because of the added vitamin D content, babies receive automatic protection against Rickets, the most common nutritional disease of infancy and childhood.

PRESCRIBE

DRYCO

ACCEPTED AMERICAN MEDICAL ASSN. Committee on Foods

Made from superior quality milk from which part of the butterfat has been removed, irradiated by the ultraviolet ray, under license by the Wisconsin Alumni Research Foundation (U. S. Patent No. 1,680,818), and then dried by the "Just" Roller Process.

COUPON

Please send reprints: Mucous Colitis in Infants—Its Etiology and Treatment (Case Reports); Acute & Habitual Vomiting in Infants; Diarrhea; Milk Irradiated by the Carbon Arc Lamp (Abs.); The Prevention and Cure of Rickets through Irradiated Milk; Dryco—The Irradiated Milk (Booklet).

THE DRY MILK COMPANY, Inc.

Dept. CW, 205 East 42nd Street, New York, N. Y.

ALL DRYCO IN THE HANDS OF DRUGGISTS IS IRRADIATED

ACCEPTED FOR N. N. R. BY COUNCIL ON PHARMACY AND CHEMISTRY OF THE A. M. A.

Your Patient's Ventriculin

is part of a manufactured lot which has been clinically tested and found to be potent. Counterparts of the medicament which patients everywhere receive have been given to patients at the Thomas Henry Simpson Memorial Institute for Medical Research of the University of Michigan. Here in this great research institution expert hematologists are studying the erythrogenic response of pernicious anemia patients to Ventriculin (desiccated, defatted hog stomach) — part of the same Ventriculin which will be dispensed on your prescription.

Though remote from clinical centers, physician and patient may benefit by the precision methods and the integrity in manufacture which guarantee the potency and stability of Parke-Davis Ventriculin.

●

New Package
An Important Saving

In addition to packages of 12 and 25 vials, each containing 10 grams, and a 100-gram bottle, we now have a large package of 500 grams. The new 500-gram package, sold at an especially attractive price, reduces the cost of Ventriculin treatment to the patient almost one-half.

PARKE, DAVIS & COMPANY

THE WORLD'S LARGEST MAKERS OF
PHARMACEUTICAL AND BIOLOGICAL PPODUCTS

Lilly

ELI LILLY AND COMPANY

FOUNDED 1876

Makers of Medicinal Products

For Reducing Nasal Congestion

INHALANT EPHEDRINE COMPOUND NO. 20
Contains Ephedrine 1 percent, with menthol, camphor, and oil of thyme in a neutral paraffin oil.

INHALANT EPHEDRINE PLAIN NO. 21
Contains Ephedrine 1 percent in an aromatized paraffin oil.

EPHEDRINE JELLY
Contains Ephedrine Sulphate 1 percent in a bland water-soluble base.

Prompt Attention Given Professional Inquiries

Principal Offices and Laboratories, Indianapolis, Indiana, U.S.A.

Lilly

A Group of Distinguished Products of
THE LILLY LABORATORIES

Amytal Tablets
For hypnosis and sedation.

Merthiolate
Solution, Tincture, Jelly (water-soluble) for effective antisepsis with low toxicity.

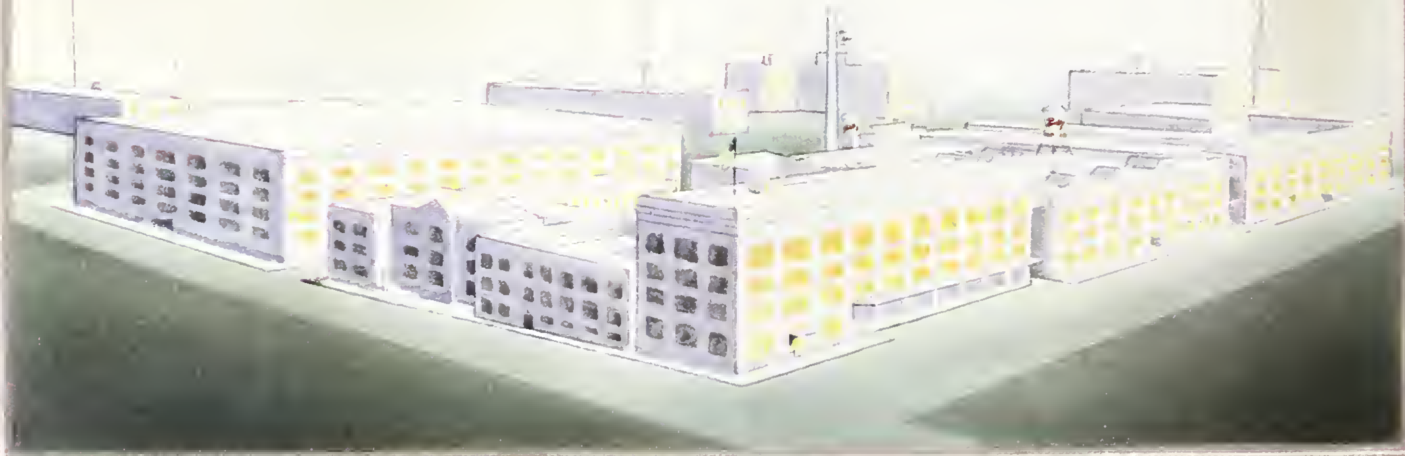
Sodium Amytal
Pulvules (filled capsules) 3 grains, for preanesthetic use; Ampoules, for convulsions.

Iletin (Insulin, Lilly)
Specific in Diabetes Mellitus.

Biologicals
The standard antitoxins, serums, and vaccines.

Prompt Attention Given to Professional Inquiries

Principal Offices and Laboratories, Indianapolis, Indiana, U. S. A.



POTTENGER SANATORIUM AND CLINIC

FOR DISEASES OF THE CHEST MONROVIA, CALIFORNIA

Twenty-eight years' experience in meeting the problems of the tuberculous patient.

Located in the foothills of the Sierra Madre mountains, at an elevation of 1000 feet. Sixteen miles east of Los Angeles, on the main line of the Santa Fe. Reached also by the Pacific Electric. Equipped for the scientific treatment of tuberculosis and other diseases of the chest. Beautiful surroundings. Close personal attention. Excellent food.

A clinic for the study and diagnosis of all diseases of the chest, including asthma, lung abscess and bronchiectasis is maintained in connection with the institution.

Weekly rates from $25 up, including medical attention, medicines (except expensive remedies), and general nursing. Extra charge for operative measures except pneumothorax.

Los Angeles Office
WILSHIRE MEDICAL BUILDING
1930 Wilshire Boulevard

For particulars address:
POTTENGER SANATORIUM
MONROVIA, CALIFORNIA

BOOK REVIEWS

(Continued from Page 14)

measures ever formulated is the Sabbath, introduced by the Jews. The church-going habit, with its clean clothes, change of occupation and social relaxation is of infinite benefit even to the healthfully employed, such as farm workers. I have known farmers keen witted enough to appreciate this, and to insist on their men cleaning up and going to church, although themselves not belonging to any denomination.

What Ramazzini has to say of the perilous nature of the work of an undertaker is interesting, as it is not so accounted at present. It may be that modern hygiene, in stamping out or greatly diminishing many of the especially virulent diseases, has brought about this change. However this may be, he laments that sordid lucre and necessitous circumstances should constrain free men to pursue this calling, and that he had never seen an old man a bearer.

Like many good books, this one, while conveying information, incites one to think of one's own experiences, a most valuable quality. If other people obtain from it as much entertainment and instruction as I have, it will surely find a ready sale. D. W. M.

TWENTY-FIVE YEARS AGO

(Continued from Text Page 216)

corporate new teachings; any new method of investigation or treatment must, after all, be judged by the results of one's own work with it in the clinic. Although encouraged by results of some cases of vaccine therapy, it seems wiser for me at present to counsel discrimination and caution with the method rather than to encourage its widespread application to general practice. With this apology for not spending time with a subject so recently introduced and still waiting credentials, it is my hope that a few minutes may profitably be spent in recalling certain features of an old and familiar friend.

"Influenza," like "rheumatism," has been a term most generously misapplied. . . .

A Criticism of Value (?).

The following communication has been received for publication and is here given exactly as received, for the reason that it shows so clearly the chaotic cerebrations of the majority of the "kickers." It seems unnecessary to comment on the originality displayed in spelling, grammar, etc.:

Los Angeles Cal. June 12 1908.

California State Medical Journal
San Francisco
Cal.

So far as the School requirements are concerned, I believe in keeping the standard here as high as anywhere, but the clause that says, first that a general average of 75% must be made & that for longevity applicants there will be granted five % on their general average for the first & every ten years of active practice thereafter & then deliberately making this clause retroactive or invalid by a following clause stating that the applicant must make not less than 60% in any one branch or subject & if he does so shall fail, I contend is unfair.

Of course the majority of men formulating the State laws are men who have never had to take state board examinations, & possibly would not be as competent, as many a man whom their law turns down, and it is all well & good for them to say we must uphold the law & so say I. . . .

To the Members of the Medical Society of the State of California.

The following appeal, issued by the *Journal of the South Carolina Association,* is sound. Will the members of our California Society follow the excellent suggestion?

(Continued on Next Page)

Southern Sierras Sanatorium

for
Tuberculosis and Allied Affections
BANNING, CALIFORNIA

SERVICE...

A commodity that cannot be satisfactorily pictured or described

Evidence of the quality of service rendered in the *Southern Sierras Sanatorium* is furnished by its sustained reputation for satisfaction.

Proof of the quality of service rendered can be secured only by an actual sojourn in this sanatorium.

Send your next patient to this restful retreat, where sympathetic interest awaits him, and we feel confident of your approval.

C. E. Atkinson, M. D., *Medical Director*

BANNING

90 miles east of Los Angeles on main line of S. P.
Near but not upon the desert (altitude 2,400)
Unsurpassed climate, free from extremes.

Modern equipment and treatment
High ethical standards
Progress reports cheerfully furnished

TWENTY-FIVE YEARS AGO

(Continued from Preceding Page)

To the Owners of this Journal, the Members of the South Carolina Medical Association:

You know that reciprocity encourages business, don't you? Outside of common decency, and leaving aside mere etiquette, it's good business to stick to your friends, isn't it? Now, who is your friend—the smooth-tongued spiel-artist who swears undying love and admiration for you as long as he is in your hearing, and laughs behind your back at your ease, gullibility and willingness to do business with him at an expense to himself of nothing more than a few lungfuls of hot air? Or is your friend the fellow who thinks enough of you to support your efforts for betterment and puts up his fair share of cash for the promotion of straightforward business intercourse with you and for the stimulation of legitimate professional business and its accompanying trade?

Now, the point is that the Journal needs the support of good ethical advertisers, and if every doctor who is part owner of the Journal will pursue the above line of thought, speech and action, the effect would be magical. As long as these houses think they can work us without advertising, they will hold back. It is up to us, every one of us, to treat them as if they were from Missouri, and show them! By doing this we are at the same time giving loyal support to those houses that are represented in our pages, which is only decent and proper. They are the ones to whom we should always give preference, and we again urge all of our joint owners to follow up this principle and always to insist distinctly when buying supplies that you wish and will have our advertisers' products—there are none better.

This is practical, hard-sense talk, and we appeal to every individual member for active, intelligent cooperation. Faithfully, Your Journal.

BOARD OF MEDICAL EXAMINERS

(Continued from Text Page 216)

violating the Medical Practice Act. As a condition of the probation, Judge Scheinman ordered them to leave the state within a week and not return until the probationary period had expired." (Glendale *News-Press,* July 28, 1933.)

"Indicted on four counts, charging him with violation of the Harrison Narcotic Act, Dr. Arthur W. Hewitt, local physician, will be arraigned in Federal Court next Monday. The physician, accused of issuing narcotic prescriptions to addicts, was released on $5,000 bond." (Los Angeles *Herald-Express,* August 9, 1933.)

"The State Board of Health is within its rights in refusing to accept physical examinations made by chiropractors on persons desiring permission to handle food, Judge Charles C. Haines ruled yesterday. Griffith Stebbens, drug-store fountain clerk, had been examined by M. H. Disney, chiropractor. When the State Board refused to accept the examination and issue Stebbins a permit, he obtained an alternative writ of mandamus, which was dismissed by the court yesterday, when it ruled that 'Chiropractic does not include health examinations for germ diseases.'" (San Diego *Union,* August 5, 1933.)

Reports relate that R. S. Zarate, alias Roberts, pleaded guilty on August 11 in the Municipal Court of the city of Los Angeles to a charge of violation of the Medical Practice Act and was sentenced to serve ninety days in the city jail, said sentence being suspended, and he was placed on probation. The reports relate that this is the same man who on August 16, 1929, pleaded guilty to a similar charge.

(Continued on Page 21)

just what you ordered, except . .

HIS mother has measured out the Evaporated Milk, water, *everything*, just as your formula said. Yet . . .

Is that the brand of Evaporated Milk you would have chosen?

When you wrote Evaporated Milk into that formula, you had in mind a grade that would meet your high standards of quality. But the average mother, lacking such standards, chooses on the basis of lay opinion only.

In the matter of brand choice, she needs your professional advice.

Among the brands of Evaporated Milk that a physician can recommend unreservedly for infant feeding are those produced by The Borden Company. For seventy-five years, Borden has maintained the highest standards of milk selection and the most rigid requirements throughout the process of manufacture. These standards and requirements prevail today in the production of all the Borden brands . . . Borden's Evaporated Milk . . . Pearl . . . Maricopa . . . Oregon . . . St. Charles . . . Silver Cow. All are accepted by the American Medical Association.

Write for free sample of Borden's Evaporated Milk and scientific literature. Address The Borden Company, Dept. 325, 350 Madison Ave., New York, N. Y.

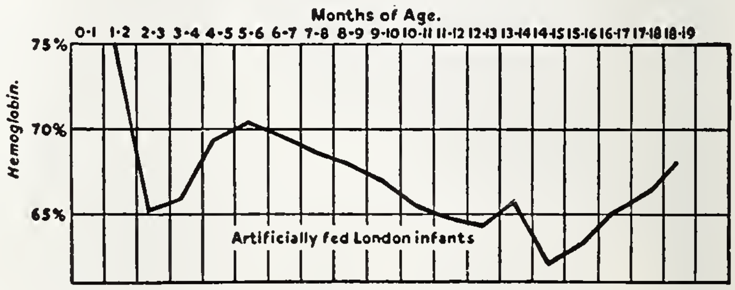
The Borden Company was the first to submit evaporated milk for acceptance by the Committee on Foods of the American Medical Association. Borden's was the first evaporated milk to receive the seal of acceptance of this Committee.

Borden's

EVAPORATED MILK

Preventing NUTRITIONAL ANEMIA *in Infants through a Normal Dietary Regimen*

NUTRITIONAL anemia was present in 45% of the breast-fed and 51% of the bottle-fed in a group of more than 1,000 infants studied by Mackay.[1] Although this anemia was of mild degree, *it was sufficient approximately to double the morbidity among the artificially fed.*



Hemoglobin level in the blood of infants of various ages. Note fall in hemoglobin, which is closely parallel to that of diminishing iron reserve in liver of average infant. Chart adapted from Mackay.[1]

Anemia Prevalent

Commenting on this work, the British Advisory Committee on Nutrition writes, "This form of anaemia is prevalent among infants, especially those living under conditions of city life, and is attributed to a deficiency of available iron and possibly also of copper. Its most important feature is susceptibility to infection, particularly a liability to colds, otorrhoea, bronchitis, and enteritis, and a tendency for infections to become chronic."[2]

Iron, incorporated in powdered milk, should be given as a routine to bottle-fed infants, according to the recommendations of this committee in a report to the Ministry of Health.

Milk Deficient in Iron

Stored in the liver of the full-term infant is a supply of iron and copper theoretically sufficient for the first six months of life. But actually the reserve is subject to wide variation, probably because of (except in the case of prematures and twins) variations in the iron content of the mother's diet during pregnancy. Hill, for example, says, "If the mother is anemic herself, or if she has eaten little iron-containing food during the last months of pregnancy, her offspring is born with an insufficient iron deposit. . . ."[3]

	IRON	COPPER
Cow's Milk, 14 oz.	1.01 mg.	0.166 mg.
Dextri-Maltose with Vitamin B, 1 oz.	2.40	0.570
	3.41	0.736
Daily Requirement*	3.11	"traces"

It is generally agreed that breast milk and particularly cow's milk are markedly deficient in iron and copper. But when 1 oz. of Dextri-Maltose with Vitamin B is added to 14 oz. cow's milk, properly diluted (as at 1 month), the above increase in iron and copper results.

FOR the same reason that it is desirable to reinforce the milk supply of the infant with iron, the trend is toward the introduction of iron-rich solid foods at an early age. The iron content of many foods is variable, however. Leichsenring and Flor[4] found that children's diets planned to contain 5 and 8.5 mg. iron actually contained only 3.25 and 6.5 mg., respectively. Pablum, higher than most foods in iron and containing standardized amounts of this mineral can be administered as early as the third month, when nutritional anemia begins to appear (see chart above). Clinical studies by Summerfeldt[5] show that Mead's Cereal (of which Pablum is the pre-cooked form) is capable of increasing the hemoglobin percentage of growing children.

	IRON	COPPER
Cow's Milk, 20 oz.	1.44 mg.	0.24 mg.
Dextri-Maltose with Vitamin B, 1½ oz.	3.60	0.855
Mead's Cereal or Pablum (dry), ¼ oz.	1.70	0.09
	6.74	1.185
Daily Requirement*	4.18	"traces"

When ¼ oz. of Pablum is fed to the 3-months-old infant receiving 20 oz. cow's milk and 1½ oz. Dextri-Maltose with Vitamin B, a significant increase in iron and copper takes place.

---

* The desirable iron intake for children according to Rose *et al.* is 0.76 mg. per 100 calories. Infant of 1 month (8¼ lb.) and infant of 3 months (11¼ lb.), both require 50 calories per lb.[6]

[1-6] *Bibliography on request.*

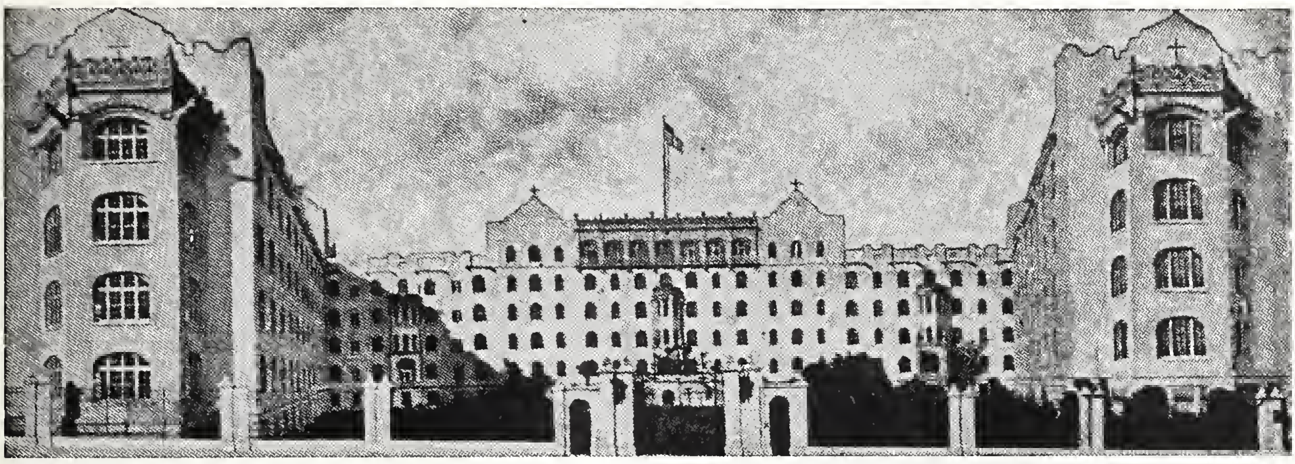
MEAD JOHNSON & COMPANY, EVANSVILLE, INDIANA, U.S.A.

Please enclose professional card when requesting samples of Mead Johnson products to cooperate in preventing their reaching unauthorized persons

ST. MARY'S HOSPITAL
2200 Hayes Street
San Francisco

Conducted by Sisters of Mercy

Accredited by the American Medical Association. Open to all members of the California Medical Association. Accredited School of Nursing and Out-Patient Department.



PROFESSIONAL STAFF

Surgery
T. Edward Bailly, Ph.D., F.A.C.S., M.D.
Guido Caglieri, B.Sc., F.R.C.S., F.A.C.S., M.D.
Edward Topham, F.A.C.S., M.D.
James Eaves, M.D.
F. F. Knorp, M.D.
Hubert R. Arnold, F.A.C.S., M.D.
Edmund Butler, F.A.C.S., M.D.
Rodney A. Yoell, M.D.
T. T. Shea, M.D.

Urology
Charles P. Mathe, F.A.C.S., M.D.
George F. Oviedo, M.D.
Thomas E. Gibson, F.A.C.S.,M.D.

Medicine
J. Haderle, M.D.
H. V. Hoffman, M.D.
Stephen Cleary, M.D.
A. Diepenbrock, M.D.
J. H. D. Roger, M.D.
Thomas J. Lennon, M.D.
James M. Sullivan, M.D.

Heart
Harry Spiro, M.D.

Obstetrics
Philip H. Arnot, M.D.
Charles C. Mohun, M.D.

Eye, Ear, Nose and Throat
F. J. S. Conlan, F.A.C.S., M.D.
L. A. Smith, M.D.
J. J. Kingwell, M.D.
T. Stanley Burns, M.D.

Orthopedics
Thomas J. Nolan, M.D.
J. J. Loutzenheiser, M.D.

Pediatrics
Randolph G. Flood, F.A.A.P., M.D.

Neurological Surgery
Edmund J. Morrissey, M.D.

Thoracic Surgery
William B. Faulkner, Jr., M.D.

Gastroenterology
Edward Hanlon, M.D.
Frank A. Kinslow, M.D.

Neurology
Milton B. Lennon, M.D.

Dermatology
H. Morrow, M.D.
Harry E. Alderson, M.D.

Pathology
Elmer W. Smith, M.D.

Radium Therapy
Monica Donovan, M.D.

Dentistry
Thomas Morris, D.D.S.
Francis L. Meagher, D.D.S.

BOARD OF MEDICAL EXAMINERS

(Continued from Page 18)

Paul Pretzel, announcing himself as a doctor of medicine and a surgeon, who claimed to hold a New York license, but unknown to medical authorities of that state, on August 2, 1933, pleaded guilty in Los Angeles to a charge of violation of the Medical Practice Act and was sentenced to serve 180 days in the city jail. (Previous entry, December, 1931.)

Embellished with the high-sounding title of "Medical Research Bureau" and distributing literature making impossible claims for his product No. 88, to rehabilitate manly vigor, James Bernard Hall of Los Angeles suddenly closed his office, following his arrest in San Francisco by Special Agent Davidson of the Board of Medical Examiners on a charge of violation of the Medical Practice Act. He is said to have returned to his former more lucrative field in Southern California, without the formality of reporting for trial. His bail was declared forfeited, according to reports, and a San Francisco bench warrant issued.

Reports relate that the Investigation Department of the Board of Medical Examiners has succeeded in its efforts to have at least one radio station stop the broadcasting of the extravagant claims of a Los Angeles so-called cancer clinic.

Gunichi Hirotsu, after advertising the treatment of cancer in Los Angeles, was charged with violation of the Medical Practice Act, pleaded guilty in the Municipal Court of Los Angeles, August 7, and was sentenced to serve 180 days in the county jail, sentence being suspended and defendant placed on probation for two years.

The Family Doctor. — Perhaps the most famous painting for the decoration of a doctor's waiting room or home is that old reliable standby, Sir Luke Fildes' "The Doctor."

This painting is undoubtedly art's greatest tribute to the service which the family doctor renders to suffering humanity, poor and rich alike. It may not be ranked among the great masterpieces, from an abstract art standpoint, but there is a human touch in the painting which has made it much more popular and admired than the Goyas, the Rembrandts, and El Grecos of greater price.

And now amid all the blare and brightness and ballyhoo of the Chicago World's Fair, we find the same old picture exerting its same old magnetism. It is not only a painting this time, but a modern presentation called "sculpticolor," which means a combination of the work of the sculptor and the painter.

The Petrolagar Laboratories, wishing to pay tribute at the World's Fair to the best friend of their product—the family doctor—had the sculptor, John Paulding, and the artist, Rudolph Ingerle, reproduce Fildes' picture in a color tableau of life-size sculptured figures. It is beautifully done, worked out of the finest detail both of design and lighting. Enclosed in a theater, suitably draped, the mechanical voice so popular at the Fair gives a brief description of the services of the family physician, to the accompaniment of appropriate music.

The exhibit is so quiet, dignified and impressive that it is a refreshing contrast to the extreme modernism which typifies the rest of the Century of Progress Exposition.

The popularity of this exhibit of the family doctor is evidenced by the fact that the average number of persons who visit it each day is about 20,000.

The story of the original painting is that the woman in the picture had been a servant to Queen Victoria

(Continued on Next Page)

FRANKLIN HOSPITAL 14th and Noe Streets

BEAUTIFULLY located in a scenic park—Rooms large and sunny—Fine Cuisine—Unsurpassed Operating, X-Ray and Maternity Departments.

Training School for Nurses

For further information
Address
FRANKLIN HOSPITAL
San Francisco

TRAVERS AND HENNIG, INC.
DEPENDABLE
PHYSICIANS' AND HOSPITAL SUPPLIES
429 Sutter Street · San Francisco · Telephone SUtter 8596
Mail Orders Given Prompt Attention :: Complete Stock on Hand
ABDOMINAL SUPPORTERS, ELASTIC STOCKINGS, TRUSSES, ETC.
EXPERT FITTERS IN ATTENDANCE

(Continued from Preceding Page)

of England on her estate at Braemar, Scotland. The woman married a forester on the estate, and their little girl became seriously ill. Queen Victoria, hearing of this, telegraphed to London for her own physician, who came and remained in constant attendance in the humble cottage until after the crisis. The child recovered, and later Queen Victoria requested Sir Luke Fildes to make the incident immortal by putting it on canvas.

Many prominent physicians who have seen the exhibit declare its educational effect on the public is so great that it should not be broken up at the end of the World's Fair, but could very well be preserved in one of the country's medical museums or public buildings.

Cutting of Government Health Department Budgets: A Criticism.—"Suicidal" was the word used by Dr. Kendall Emerson to describe the cutting of government health department budgets to the extent of impairing their service. Doctor Emerson is the acting executive secretary of the American Public Health Association, and he spoke over the National Farm and Home radio network.

"The rule usually followed in effecting public economies is to make cuts where party or personal interests will suffer least," said Doctor Emerson. "Precious little attention is paid to the relative importance of the various functions of government, a great deal to the importance of the political neck upon which the axe of economy is to fall.

"We are all convinced that governments can be run on far less than some have led us to believe was necessary. Anyone who attempts to check the rising tide of economy will meet with instant popular disapproval. But we must separate the essential from the non-essential. Above all, we must have protection against the menace of epidemic diseases which holds in itself far more public danger than the peril that lies in unjust laws, fire, and banditry, all combined."

Doctor Emerson deplored the fact that the nature of public health protection is such that the individual goes about his business oblivious of what it costs in brain, energy, and skill. "The public health service spends little time on publicity," stated Doctor Emerson. "It's thoughts are bent on scientific, not political considerations. It is the least advertised of all our public services, yet it is the first of the fundamental necessities of government if we are to have healthy lives, happy homes, living children, and grandparents in every family.

"The public health service wears no striking uniform, it does not break the slumber of the night with

(Continued on Page 24)

A System for the

Collection of Fees

that has proved its worth

Our bookkeeper fails to find your account settled on our books. Please help him out.

PAST DUE!

☛ *This Account has no doubt escaped your notice. Will you please favor us with a remittance by return mail and oblige?*

THIS ACCOUNT
IS PAST DUE.
PLEASE REMIT.

Regarding Your Past-Due Account

Our records show that several statements and reminders have been sent you regarding the enclosed statement.

If your circumstances have made it impossible for you to pay the amount due, kindly write us promptly to that effect. Our office will then endeavor to extend all possible courtesies.

You appreciate, we are sure, that physicians, like other citizens, must pay their bills promptly. They can only do so, however, when their own clients in turn pay them promptly for such professional services as may have been rendered.

A check to cover your account, which is now considerably overdue, will be appreciated.

Final Notice

In practically all businesses the custom which is generally followed with overdue accounts is to send such to a collecting agency.

Our bookkeeper has nothing in the records of the office to show when you intend to pay the enclosed account. Perhaps the previous statements and reminders may have been overlooked or ignored.

Following the rule of this office, this overdue account will be sent to the collecting agency within ten days if arrangements for its settlement are not made prior to that time.

This collection bureau method is disagreeable to us; and we believe, also to you. By promptly sending your check all this can be avoided.

When an account is sent to the collecting agency that organization takes full charge of it thereafter.

In the September, 1927, issue of California and Western Medicine, page 398, appeared an article relating to the "collection of fees." Following this publication so many orders were received by us for printing the series of gum stickers and notices, we decided to print and stock the series in large quantities.

That we were justified in this decision is evidenced by the fact that thousands of these notices have been used by the medical profession of California. They *get* results. Many users of the system have reordered the series.

You, too, can profit by using the system for your delinquent accounts. They are inexpensive and easy to use.

The prices, including postage, are:

250	$ 6.75
500	9.00
1000	13.50

THE JAMES H. BARRY COMPANY

1122-24 Mission Street
SAN FRANCISCO, CALIFORNIA
[*Telephone* MArket 7900]

Support in Cases of OBESITY

ABDOMINAL walls, when flabby or pendulous, require the support of a physiological garment with a low-cupped, form-front for security. Uplift should be provided without raising the flesh unduly through the body center, but with a slight flattening effect. The Camp Physiological Support, with the Camp Patented Adjustment, illustrated (Model No. 39)) functions in this way without improper constriction or discomfort.

Figures at bottom of illustration show:
Left—Obese and prolapsed condition without support.
Right—Improved posture with flesh control and uplift from support.

Approved and recommended by leading physicians. Sold by Surgical, Drug and Department Stores and Corset Shops. Write for Physician's Manual.

CAMP TRADE MARK
Physiological Supports

S. H. CAMP & COMPANY
Manufacturers, JACKSON, MICHIGAN

CHICAGO 1056 Merchandise Mart
NEW YORK 330 Fifth Avenue
LONDON 252 Regent Street W.

Ten Acres of Beautiful Grounds

COMPTON SANITARIUM and LAS CAMPANAS HOSPITAL
COMPTON, CALIF.

30 minutes from Los Angeles. 130 beds for neuropsychiatric patients. 40 beds for medical-surgical patients. Clinical studies by experienced psychiatrists. X-ray and clinical laboratories. Hydrotherapy. Occupational therapy. Ten acres landscaped garden. Tennis. Baseball. Motion pictures. Scientifically sound-proofed rooms for psychotic patients. Accommodations ranging from ward beds to private cottages.

GLENN MYERS, M. D., ***Medical Director***
Philip J. Cunnane, M. D. G. Creswell Burns, M. D.
Helen Rislow Burns, M. D.
Office: **1052 West 6th Street, Los Angeles**

(Continued from Page 22)

the clang of the fire patrol or the shriek of the siren. Yet without it modern life could not endure. Quietly and unobtrusively it goes about supplying the community with pure water, uncontaminated with the germs of disease; it disposes of the city's waste and controls its smoke and dirt; it supervises milk and other foods and assures safety from the infections that such supplies may carry. Through the eternal vigilance of its quarantine it renders cities free from devastating plague, from typhus, cholera, yellow fever, and the like. Never sleeping, it guards the child from diphtheria, scarlet and typhoid fever, and other frequently fatal contagious diseases.

"Despite its vital importance the public health service has always been underpaid and understaffed. Yet its achievements have been beyond all praise. Had it shown extravagance or wastefulness comparable to that of other government departments, it should submit without protest to the reductions inevitable in times of financial stress. But it has not laid itself open to the charge. On its merits it has the right to demand from all good citizens such generous support that its basic services shall remain unhampered.

"If we people but knew the risk of decreased health protection, we would approve reduction in every other department of government before allowing ourselves to be driven to the suicidal procedure of impairing the service that watches with unslumbering vigilance over our comfort, our health, and our children's lives."

If education does not afford opportunity for wholesome recreation and train capacity for seeking and finding it, the suppressed instincts find all sorts of elicit outlets. . . . Education has no more serious responsibility than making adequate provision for enjoyment of recreative leisure; not only for the

LIVERMORE SANITARIUM

The Hydropathic Department devoted to the treatment of general diseases excluding surgical and acute infectious cases. Special attention given functional and organic nervous diseases. A well equipped clinical laboratory and modern X-ray Department are in use for diagnosis.

The Cottage Department (for mental patients) has its own facilities for hydropathic and other treatments. It consists of small cottages with homelike surroundings, permitting the segregation of patients in accordance with the type of psychosis. Also bungalows for individual patients, offering the highest class of accommodation with privacy and comfort.

GENERAL FEATURES

1. Climatic advantages not excelled in United States. Beautiful grounds and attractive surrounding country.
2. Indoor and outdoor gymnastics under the charge of an athletic director. An excellent Occupational Department.
3. A resident medical staff. A large and well trained nursing staff so that each patient is given careful individual attention.

Information and circulars upon request
Address: CLIFFORD W. MACK, M. D.
Medical Director
LIVERMORE, CALIFORNIA
Telephone 7-J

CITY OFFICES:

SAN FRANCISCO
450 Sutter Street
DAvenport 3523

OAKLAND
1624 Franklin Street
GLencourt 5989

sake of immediate health, but still more if possible for the sake of its lasting effect upon habits of mind (John Dewey, 1915).—*Weekly Bulletin, California Department of Public Health.*

Those desiring to reduce their weight may accomplish this by the simple expedient of reducing the amount of all food eaten proportionately. Do not attempt to omit altogether any particular item. Eat a restricted amount of a large variety of foods (Surgeon General H. S. Cummings).—*Weekly Bulletin, California Department of Public Health.*

Among the first of the manufacturing organizations to express complete coöperation with the suggestions of the National Recovery Act was the Cutter Laboratory, Berkeley, manufacturers of serums, vaccines and other biological products for human use.

This organization, according to Dr. Robert K. Cutter, moved to comply with the requests of the national administration even before formal notifications were forwarded to industrialists. Labor at the Cutter laboratories went on a 35-hour week on August 1, while executives of the organization were placed on a 40-hour week. This, it is expected, will necessitate an increase in employment to care for increasing production needs.

Three Interesting Old Medical and Pharmaceutical Documents.—In the historic collection of pharmaceutical and medical rarities and antiques recently acquired by E. R. Squibb & Sons, which forms the nucleus of their professional exhibit at the Century of Progress Exposition in Chicago, are several rare and unusual documents.

One of these is a certificate written in German on parchment and bound elaborately in a velvet-covered folio, to which is attached a great seal encased in a walnut box. The seal is that of Emperor Leopold II of the Holy Roman Empire, and the document is a pharmacy franchise granted to Johanna Martin Endter in 1791.

Another and more recent one is a pontifical privilege granted by Pope Leo XII in 1820 to Paulus Ruga to practice pharmacy. This is written in Latin on parchment and bound in red leather. It carries a seal enclosed in a brass case.

The most interesting one of the three, and the oldest, is a parchment folio, bound in velvet and with a great seal of red sealing wax enclosed in a walnut case and attached to the document by silken cords. This document is written in German, and is an imperial privilege granted to David Liebel of Nuremberg by Emperor Karl VI of the Holy Roman Empire on June 20, 1728, more than two hundred years ago.

This is not an ordinary pharmaceutical franchise. It is, in effect, a perpetual grant to David Liebel to make and sell a "medicinal secret," to wit, *"Lebens Pillen"* (Life Pills), which are recommended by the maker for counteracting *"Pest, Gifte und aller menschlichen Krankheiten"* (Plague, Poison and all Human Ills).

The grant, which is unlimited as to time, provides protection to David Liebel, the pharmacist and manufacturer of these life pills, against the improper use of the name, the counterfeiting of the "sign" (corresponding to our trade-mark), and the imitation of the product itself.

This is a "patent medicine" in the literal sense of the term, and is one of the earliest on record, a few having been granted prior to this in England, the earliest one known having been granted in 1711 by Queen Anne.

The document is elaborately engrossed with many decorative flourishes. It begins with a recital of the countries over which Emperor Karl claimed domain, and which covered a geographic range from Gibraltar

(Continued on Next Page)

THE PARK SANITARIUM

1500 PAGE STREET · SAN FRANCISCO, CALIFORNIA · *Telephone* MARKET 0331

TYPICAL BEDROOM

IT is our belief that The Park Sanitarium can only function to its best advantage by having the good will and support of the medical profession. When *your* patients are referred to us they remain in *your* care. All patients have individual rooms and your instructions are executed by a trained personnel with daily reports furnished to out-of-town doctors. Our staff includes a resident physician and a competent corps of graduate nurses. We would welcome your investigation of our services.

Attractive rates given for chronic cases · ·

Booklet on request

For use in the Prevention and Treatment of the Acid-Ash Type of

ACIDOSIS

California Lima Bean FLOUR!

Alkalinity, of course, neutralizes *acidity*. And Limas are one of the most alkaline foods known—41.65 per 100 grams!

To meet a definite demand from the medical profession, we have developed, to a high degree of fineness, a Lima Bean FLOUR—for making non-acid breads, muffins, pancakes and waffles for Basic Diet menus!

Lima FLOUR— is available in 10-lb. bags at $1.20, and in 100-lb. bags at $10.00. Upon receipt of price and delivery instructions your order will be shipped parcel post or express collect. Send orders, and make check or money order payable to—

CALIFORNIA LIMA BEAN
GROWERS ASSOCIATION
Oxnard, California

(Continued from Preceding Page)

to Jerusalem on the south, and Schleswig to Mecklenburg on the north.

It bears the signature of Karl himself, properly attested, and with a note of its having keen recorded in the imperial archives.

There are several formulas for *"Lebens Pillen"* in German pharmaceutical works of the last century, one of which is still found in the latest edition of "Hager's Practice of Pharmacy." A common purpose of all of these pills is to produce a laxative or cathartic action, and common factors in all of the formulas are such well-known drugs as aloes and rhubarb, which have been the standbys of many nostrum makers ever since.

Seasonal Food Poisoning.—Cases of food poisoning incurred through the consumption of contaminated cream custard products, such as cream pies, cream puffs, and other products filled with cream custard, are occurring in large numbers each year, particularly during the summer season. Cream custard is an ideal medium for the growth of bacteria, and rapid multiplication occurs if these products are not kept under proper refrigeration. Even warmth and moisture provide suitable conditions for bacterial growth, and if these products are infected they become, within a short time, potential sources of extremely acute illnesses. Various types of organisms are responsible for these cases of food poisoning. Most of those that have occurred in California are due to paratyphoid, staphylococcus, and streptococcus organisms. The foods in themselves, because of their composition and ingredients, are not responsible. The illness produced by the consumption of such infected foods is generally due to toxins which may be developed through the growth of the organisms.

An increasing number of these cases is due to the use of custard-filled bakery products, such as cream-

(Continued on Page 28)

②

— *about* Cigarettes

Six Southern States supply the tobacco for *three-fourths* of the World's cigarettes

BRIGHT TOBACCO—grown principally in Virginia, North Carolina, South Carolina, and Georgia.

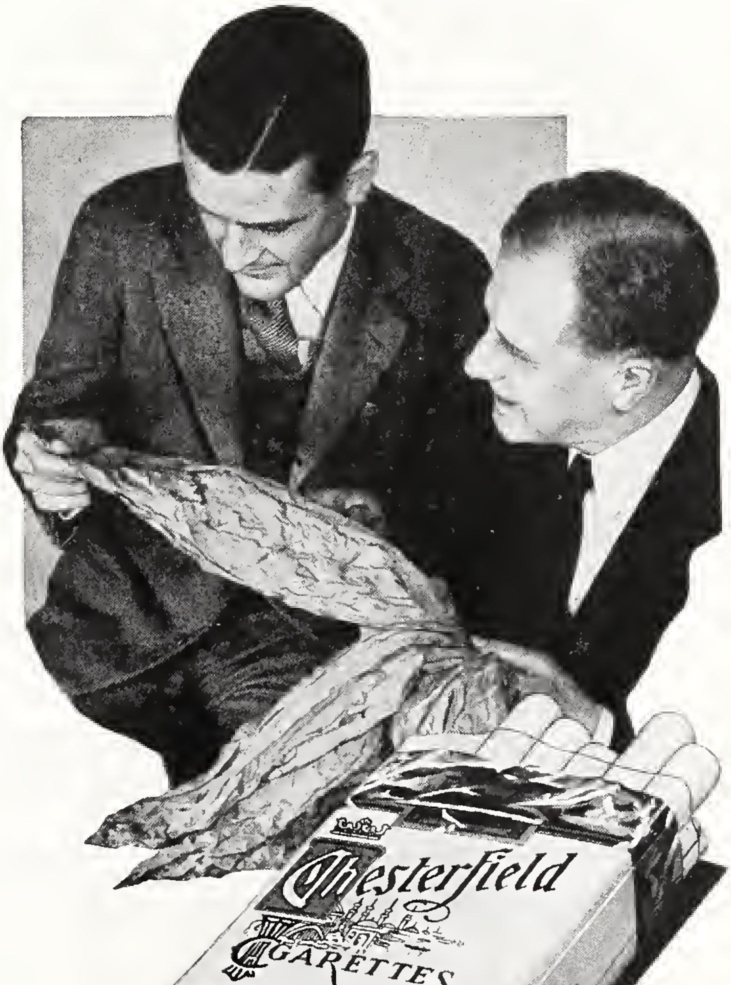
BURLEY TOBACCO—grown principally in Kentucky, Tennessee, Ohio and Indiana.

MARYLAND TOBACCO—grown in only five counties of the southern part of Maryland.

ALL these tobaccos are good, but no *one* tobacco alone is just right for cigarettes. A good cigarette is made of *many* different kinds.

Take Chesterfields—they contain *all* of the above tobaccos, but in different proportions—so much Bright, so much Burley, and so much Maryland. Then these tobaccos are seasoned with aromatic Turkish tobacco . . .

so that Chesterfield is the cigarette that's milder—the cigarette that tastes better.



Chesterfield

© 1933,
LIGGETT & MYERS
TOBACCO CO.

FRENCH HOSPITAL • Geary Street and Fifth Avenue
SAN FRANCISCO, CALIFORNIA

HENRI J. BAZERQUE, *President*
V. LABRUCHERIE, *Superintendent*
ALBERT AUBERT, *Secretary*
ELSIE E. MITCHELL, R. N., *Supt., School of Nursing*

A general hospital of 225 beds operating an accredited school of nursing, admitting all classes of patients except those suffering from mental diseases. Organized in 1851 and is operated by the French Mutual Benevolent Society, through a Board of Directors, a chief executive officer and staff. Accredited for intern training by the American Medical Association and approved by the American College of Surgeons

MEDICAL STAFF

Medicine
A. N. FREGEAU, M. D., Chief
E. S. KILGORE, M. D., Consultant in General Medicine
THOMAS G. INMAN, M. D., Consultant in Neuropsychiatry
MARK GERSTLE, JR., M. D., Consultant in Neurology
ERNEST D. CHIPMAN, M. D., Consultant in Dermatology
JAY JACOBS, M. D., Consultant in Dermatology
CABOT BROWN, M. D., Consultant in Lung Diseases

Urology
A. H. McNULTY, M. D.
ALVIN E. CERF, M. D.
SAMUEL A. GOLDMAN, M. D.

Radiology
LLOYD B. CROW, M. D.

Surgery
ASA W. COLLINS, M. D., F.A.C.S., Chief
HAROLD M. GILFILLAN, M. D., Assistant
CARL L. HOAG, M.D., F.A.C.S., Associate
E. B. TOWNE, M. D., Consultant in Neurological Surgery
EDMUND J. MORRISSEY, M. D., Consultant in Neurological Surgery
GEORGE WARREN PIERCE, M. D., Consultant in Plastic Surgery
W. L. ROGERS, M.D., Consultant in Lung Surgery

House-Visiting Department
COLEMAN A. BLOCK, M. D.
LOUIS D. RONCOVIERI, M. D.

Pediatrics
BRADFORD F. DEARING, M. D.

Anesthesia
HERMAN MARCUS, M. D., Chief
ELLIS D. HARMON, M. D.

Orthopedics
ALFRED RONCOVIERI, M. D.
FRANK A. LOWE, M. D.
RALPH SOTO-HALL, M. D., Consultant

Ophthalmology and Oto-Laryngology
E. C. FABRE-RAJOTTE, M.D., Chief
VICTOR D'ERCOLE, M. D., Assistant

Obstetrics and Gynecology
W. J. HAWKINS, M. D., F. A. C. S.
R. F. GRANT, M. D.
J. K. PLINCZ, M. D.
CHESTER L. COOLEY, M. D.

Pathology
MARION H. LIPPMAN, M.D., Director Clinical and Pathological Laboratory
DAVID A. WOOD, M.D., Pathologist

QUALITY SERVICE DEPENDABILITY

DIEDERICH OPTICAL COMPANY, INC.

WHOLESALE AND MANUFACTURING OPTICIANS

OCULISTS' PRESCRIPTIONS FILLED

The prescription service we offer is backed by our name, which has been attained by doing high grade work for many years.

649 SOUTH OLIVE STREET • LOS ANGELES, CALIFORNIA

(Continued from Page 26)

filled pies and pastry which have been allowed to stand for definite periods of time before eating. Cases of food poisoning from this source are never due to the decomposition of the product. They are not due to the metallic compounds in the utensils which may be used in their manufacture. They are due, rather, to contamination by the ordinary pus germ, staphylococcus, or to the other organisms already referred to. They become contaminated in various ways. Sometimes this occurs through handling the products, either in the process of manufacture or after the finished product is ready for human consumption. In paratyphoid, carriers are often responsible for the contamination.

Most cases of food poisoning are acute and occur from four to eight hours after eating the infecting product. The ordinary symptoms of gastro-intestinal irritation occur, with nausea, vomiting, cramps and diarrhea. During the present season, several acute outbreaks of this sort have occurred and several fatal cases have been recorded. In one group of cases which occurred last month, thirteen individuals were made ill through the consumption of contaminated cream custard pies. Several other outbreaks, involving smaller numbers of cases, have occurred.

It is unfortunate that wholesome food products should be allowed to become contaminated. If they are kept under proper temperatures, there is little possibility of contracting food poisoning through their consumption. Certainly, during warm weather all cream custard products should be kept under refrigeration and they should not be allowed to stand for any length of time under conditions conducive to warmth and moisture. Unless proper safeguards are used in the manufacture and storage of such products there may be great danger in their use.

(Continued on Page 30)

DOCTOR . . .

–Protect your patients

–Safeguard your prescriptions

–Prevent substitution

●

Insure the accuracy of your prescription and help prevent unscrupulous substitution by specifying "Petrolagar N.N.R."

Petrolagar is the original agar and oil emulsion accepted for New and Nonofficial Remedies by the Council on Pharmacy and Chemistry of the American Medical Association.

The Rules of the Council were adopted with the object of protecting the medical profession and the public against fraud, undesirable secrecy and objectionable advertising in connection with proprietary and medicinal articles.

Petrolagar is 65 per cent (by volume) liquid petrolatum of most rigid specifications, emulsified with "Number One, Silver White, Kobe Agar-agar."

Petrolagar Laboratories, Inc., 8134 McCormick Boulevard, Chicago

CALSO WATER

Palatable ALKALINE *Sparkling*

NOT A LAXATIVE

Calso Water: An efficient method of supplying the normal ALKALINE SALTS for counteracting ACIDOSIS.

Calso Water: Made of distilled water and the ALKALINE SALTS (C. P.) normally present in the healthy body.

Calso Water: Counteracts and prevents ACIDOSIS, maintains the ALKALINE RESERVE.

●

The Calso Company

524 Gough Street
San Francisco

Transportation Bldg.
Los Angeles

A FEW CHOICE LOCATIONS AVAILABLE

AT A REDUCED RENTAL SCHEDULE

APPLY TO

CHAS. W. SMITH
BUILDING MANAGER
ROOM 415 450 SUTTER STREET
Telephone GARFIELD 7221

FOUR FIFTY SUTTER

A. P. HOTALING & CO.
DISTILLERS' AGENTS AND DISTRIBUTORS
ESTABLISHED 1852
451–461 Jackson Street (at Hotaling Place), San Francisco *Telephone* GArfield 8760

(Continued from Page 28)

Fortunately, the idea that cases of this sort are due to "ptomaines" is not acceptable now either to the general public or to the medical profession. The term "ptomaines" is almost obsolete, and cases which might be due to ptomaines are probably the most rare of all cases of food poisoning. The term is derived from the Italian word "ptoma," which means a corpse. It is agreed generally that the term "ptomaine poisoning" is a misnomer and should never be used.

Manufacturers of custard-filled bakery products must use high standards of sanitation in the production of such products and, unless refrigerated, such products should be consumed within a very short time after they are manufactured. The same applies to the housewife who manufactures such products in the home. It is not safe to permit any cream-filled product, unless refrigerated, to stand for any length of time before it is eaten. Careful observation of these simple procedures may prevent many cases of acute illness, with possibly fatal results.—*Weekly Bulletin, California Department of Public Health.*

Quarantine Placed on Mussels.—Under date of June 22, 1933, Dr. Giles S. Porter, Director of the State Department of Public Health, placed a quarantine upon mussels in certain sections of the coast of California. It became necessary to establish this quarantine because of the highly toxic condition of mussels, as revealed through laboratory tests. Health officers throughout the state have been advised of this quarantine and have been instructed to enforce it rigidly.

It is advisable to issue warnings to individuals who may be members of beach parties within the restricted areas, since it is customary for large numbers of persons to visit the mussel-growing areas on Saturdays and Sundays of each week during the summer season. It is particularly necessary that such individuals be advised of the dangers that may lie in eating mussels gathered at this season of the year. It is possible that cooking these shellfish in water, to which a tablespoonful of bicarbonate of soda has been added for each quart, will destroy most of the poison. Simply cooking shellfish in plain water will not destroy the poison.

Following is the text of the quarantine order:

Laboratory examinations have shown that mussels from certain sections along the coast of California are *now* poisonous. Therefore, a quarantine of all mussels is hereby established. This quarantine covers the coast area from Monterey County to the Klamath River in Del Norte County, with the exception of the bay of San Francisco.

(Continued in Back Advertising Section, Page 34)

INTERNATIONAL MEDICAL ASSEMBLY

INTER-STATE POSTGRADUATE MEDICAL ASSOCIATION OF NORTH AMERICA

Public Auditorium

Cleveland, Ohio

OCTOBER 16–17–18–19–20, 1933

OFFICERS OF THE ASSOCIATION

President,
DR. WILLIAM J. MAYO, Rochester, Minn.
President-Elect,
DR. JOHN M. T. FINNEY, Baltimore, Md.
Presidents of Clinics,
DR. EDWARD W. ARCHIBALD, Montreal, Can.
DR. CHARLES H. MAYO, Rochester, Minn.
Managing-Director,
DR. WILLIAM B. PECK, Freeport, Ill.
Secretary,
DR. TOM B. THROCKMORTON, Des Moines, Ia.
Treasurer and Director of Foundation Fund,
DR. HENRY G. LANGWORTHY, Dubuque, Ia.
Director of Exhibits,
DR. ARTHUR G. SULLIVAN, Madison, Wis.
Speaker of the Assembly,
DR. GEORGE V. I. BROWN, Milwaukee, Wis.
Chairman, Program Committee,
DR. GEORGE W. CRILE, Cleveland, Ohio

ALL MEDICAL MEN AND WOMEN IN GOOD STANDING CORDIALLY INVITED

Intensive Clinical and Didactic Program by World Authorities

The following is a major list of members of the profession who will take part on the program:

A. W. Adson, Rochester, Minn.
Irvin Abell, Louisville, Ky.
Edward W. Archibald, Montreal, Can.
Lewellys F. Barker, Baltimore, Md.
Edward L. Bauer, Philadelphia, Pa.
Arthur Dean Bevan, Chicago, Ill.
P. Brooke Bland, Philadelphia, Pa.
Harlow Brooks, New York, N. Y.
Alan G. Brown, Toronto, Canada
George V. I. Brown, Milwaukee, Wis.
Hugh Cabot, Rochester, Minn.
Henry A. Christian, Boston, Mass.
Arthur C. Christie, Washington, D. C.
George W. Crile, Cleveland, Ohio
Elliott C. Cutler, Boston, Mass.
Walter E. Dandy, Baltimore, Md.
Charles A. Elliott, Chicago, Ill.
John F. Erdmann, New York, N. Y.
John M. T. Finney, Baltimore, Md.
John R. Fraser, Montreal, Canada
Charles H. Frazier, Philadelphia, Pa.
William D. Haggard, Nashville, Tenn.
William B. Hendry, Toronto, Canada
Elliott P. Joslin, Boston, Mass.
Frederick J. Kalteyer, Philadelphia, Pa.
Louis J. Karnosh, Cleveland, Ohio
Frank C. Knowles, Philadelphia, Pa.
Frank H. Lahey, Boston, Mass.
Burton J. Lee, New York, N. Y.
Dean D. Lewis, Baltimore, Md.
Fielding O. Lewis, Philadelphia, Pa.
Warfield T. Longcope, Baltimore, Md.
William E. Lower, Cleveland, Ohio
Willis F. Manges, Philadelphia, Pa.
W. McKim Marriott, St. Louis, Mo.
Charles H. Mayo, Rochester, Minn.
William J. Mayo, Rochester, Minn.
Joseph F. McCarthy, New York, N. Y.
S. Hanford McKee, Montreal, Can.
James H. Means, Boston, Mass.
John J. Moorhead, New York, N. Y.
George P. Muller, Philadelphia, Pa.
Howard C. Naffziger, San Francisco, Calif.
Gordon B. New, Rochester, Minn.
Bernard H. Nichols, Cleveland, Ohio
Fred W. Rankin, Lexington, Ky.
William E. Robertson, Philadelphia, Pa.
Leonard G. Rowntree, Philadelphia, Pa.
Otto H. Schwarz, St. Louis, Mo.
Roy W. Scott, Cleveland, Ohio
Elsworth S. Smith, St. Louis, Mo.
Cyrus C. Sturgis, Ann Harbor, Mich.
Waltman Walters, Rochester, Minn.
Joseph T. Wearn, Cleveland, Ohio
Hugh H. Young, Baltimore, Md.

HOTEL HEADQUARTERS
Hotel Cleveland. Hotel Statler

—HOTEL RESERVATIONS—

Hotel Committee, Dr. Clarence H. Heyman, Chairman,
10515 Carnegie Avenue, Cleveland, Ohio

Final program mailed to all members of the medical profession September 1st.
If you do not receive one, write the Managing-Director or Executive Secretary for same.

Comprehensive Scientific and Technical Exhibit. Special Entertainment for the Ladies.

REDUCED RAILROAD RATES FROM ALL PARTS OF THE UNITED STATES AND CANADA

FREDERICK RAY

Collection Specialist

Operating

"ADJUSTMENT SERVICE"

Since 1918

Wilson Building · First and Spring · Los Angeles

MEMBER

- Commercial Law League of America
- American League of Collection Agencies
- California Association of Mercantile Agencies

Depository: Security First National Bank, First and Spring, Los Angeles.

Licensed by State of California.

Bonded by U. S. Fidelity and Casualty and A. C. S., Detroit, Mich.

Detailed information and references furnished on request. Mail in your delinquent accounts now. Membership in various agencies permits not only United States but a world-wide collection service. Get your debtors out of **your** books and into **mine.**

*

ELI LILLY AND COMPANY

FOUNDED 1876

**Makers of
Medicinal Products**

PHYSICIANS have expressed their satisfaction with Lilly Diphtheria Products, the convenience and efficiency of Lilly packages, and their quick availability through the drug trade.

**Diphtheria Antitoxin
Diphtheria Toxoid
Diphtheria Toxin-Antitoxin Mixture
The Schick Test**

PROMPT ATTENTION GIVEN TO INQUIRIES FROM PHYSICIANS

ADDRESS ELI LILLY AND COMPANY, INDIANAPOLIS, INDIANA, U. S. A.

CALIFORNIA
AND
WESTERN MEDICINE

Owned and Published Monthly by the California Medical Association
FOUR FIFTY SUTTER, ROOM 2004, SAN FRANCISCO
ACCREDITED REPRESENTATIVE OF THE CALIFORNIA AND NEVADA MEDICAL ASSOCIATIONS

VOLUME XXXIX SEPTEMBER, 1933 No. 3

MALIGNANT DISEASE OF THE COLON*

By HARVEY B. STONE, M. D.
Baltimore, Maryland

THE greatest problem of clinical medicine at the present time is cancer. This is true of cancer in general. The problem becomes especially important in certain organs and parts of the body because of the relative frequency with which malignant disease involves these areas; and among such positions of election the colon occupies a prominent place. The successful cure of cancer anywhere depends upon the ability to destroy it completely, which usually means a wide removal of the growth and the surrounding structures. Obviously, such measures of treatment cannot be carried out in locations where vital structures would have to be sacrificed. It follows that growths in those areas which permit wide removal without interference with vital functions offer relatively favorable opportunities for cure, and among such favorable organs the colon must be counted, since it is possible to remove large portions of it without impairment of health or function. For these three reasons, then—the importance of cancer, the frequency with which it involves the colon, and the suitability of the colon for radical surgical removal—our subject is one that deserves emphasis.

IMPORTANCE OF EARLY DIAGNOSIS

In any discussion of cancer, primary importance is attached to early diagnosis, and this general rule applies as well to growths in the colon as to other parts of the body. The subject of diagnosis of malignant disease of the colon has already been treated by Doctor Bowen, so that only the most general reference on that phase of the subject will be made in this paper, the principal purpose of which is to discuss the matter of treatment. There are, however, certain well recognized and often emphasized points that, for the sake of completeness, should be mentioned. The first of these is the unfortunate absence of symptoms which may often be encountered in growths of the large bowel until the disease is far advanced. It is well known that in many cases the patient has no noticeable warning of ill health until acute obstruction suddenly develops. This silent growth not only renders early recognition difficult in many cases, but frustrates the success of popular campaigns to arouse the public to its danger. It is obvious that we cannot expect patients to present themselves for examination when they have no reason to believe that there is anything wrong with their health. The symptoms which are recognized as suggestive of disease of the large bowel, and which should arouse suspicion as to the possibility of cancer, may be catalogued briefly as follows: disturbances of intestinal function—gas pains, increasing constipation, distention and gurgling—palpable tumor, blood in the stool (either fresh or occult), anemia, loss of weight, and tenderness. It has been brought to the attention of the profession, notably by various publications from the Mayo Clinic, that there are certain differences in the symptomatology of growths in the right half of the colon and those in the left side. Thus, anemia is particularly apt to occur in tumors of the cecum and ascending colon. Indeed, a marked secondary anemia may be the only observable symptom for a considerable period of time, and the existence of such an unexplained anemia should direct attention toward the right side of the colon in efforts to explain it. On the other hand, obstructive symptoms are especially apt to occur when the growth involves the left side of the colon. In addition to the signs and symptoms that may be discovered by ordinary clinical examination, the x-ray provides an invaluable aid in diagnosis of this particular disease. Since that subject has been dealt with at length by Doctor Bowen, I shall content myself with one comment only: valuable as the x-ray is, there are certain cases in which the clinical signs and symptoms point strongly to a growth in the bowel which, for one reason or another, fails of demonstration by x-ray study. The writer has had several such experiences, and has formed the opinion that when the clinical evidence is strong for the existence of a growth, and the x-ray is unable to furnish support for this diagnosis, it is, nevertheless, the part of wisdom to explore the abdomen. In at least four such personal cases, a growth has been found.

---

* Guest speaker paper, read before the joint meeting of the Radiology and General Surgery Sections of the California Medical Association at the sixty-second annual session, Del Monte, April 24-27, 1933.

PATHOLOGY

In regard to the pathology of malignant disease of the colon, cancer is practically the only form of growth to be considered. It is true that sarcoma does occur, but it is so rare as to be a condition worthy of reporting only when encountered. There are three types of cancer to be noted—scirrhus, adenocarcinoma, and the less common variety variously known as colloid, gelatinous, or mucoid. Bleeding and anemia are more characteristic of adenocarcinoma, and obstructive phenomena of scirrhus, although these are not hard-and-fast distinctions.

TREATMENT

To pass to the main purpose of this paper, the subject of treatment of malignant growth in the large bowel falls naturally into two major divisions: those procedures which aim at radical cure of the disease and those which are designed for palliation alone. Each of these groups again is susceptible of division into those cases which are partially or completely obstructed when they first come for treatment, and those in which obstruction is not present. The first of these classifications to deal with are those tumors which are suitable for radical cure in patients without obstruction; and we proceed to consider the principles to be employed in this group.

Preoperative Preparation.—The first, and one of the most important matters to be dealt with in considering the treatment of nonobstructive cancer of the colon, is proper preoperative preparation. It is the practice of the writer to devote at least four or five days to this preparation, and if necessary a longer time. The patient is kept in the hospital, but not confined to bed. The diet is of the high caloric, low-residue type. Fluids with sugar in them are pushed. Mineral oil night and morning, a daily small saline laxative, and a daily soap and water enema are prescribed to clear the bowel thoroughly. A careful general physical examination is made, and the patient is grouped and matched for blood transfusion. If there is marked anemia, a transfusion of 500 cubic centimeters is given two days before operation, and in every case where a radical removal is done, a similar transfusion is given in the operating room toward the end of the operation. It is believed that this careful preparation has greatly improved the results of operative treatment. The writer has not employed the preliminary vaccination of the peritoneum described by Rankin, and cannot express an opinion as to its value. There has been increasing emphasis laid upon the desirability of preliminary colostomy in cases of cancer of the colon. D. F. Jones of Boston was among the first to insist upon the need of preliminary colostomy in cases of obstruction, or near obstruction from growth, and the truth and importance of his teaching have so impressed surgeons that some, like A. O. Whipple, have expanded the idea to cover practically all cases of colon cancer. The writer, whose opinion in this respect is supported by Rankin, does not believe there is any necessity to make a two-stage operation of all cases, and does not employ preliminary colostomy unless there is definite evidence of some degree of actual obstruction.

Operative Procedures. — At operation, under general or spinal anesthesia, the abdomen is explored through a suitable incision to determine whether the growth is operable for cure. If there is liver, distant lymph gland, peritoneal, or omental involvement, or direct extension too great for successful removal, the case falls into the inoperable group and will be discussed later. If there is no obstruction, and the growth is favorable for radical cure, resection is undertaken. It is not the purpose of this paper to detail the steps of operation, but to outline the principles employed. If the growth is on the right side of the colon, from the cecum to the hepatic flexure, the whole ascending colon is mobilized by division of the peritoneum lateral to it, and lifted entirely out of its bed. As it is raised, the peritoneum, blood vessels and glands mesial to it are freed from the retroperitoneal structures. This whole mobilized portion with the associated vessels and glands is then resected, and an anastomosis made between the ileum and the transverse colon. The basis of this operation is the removal of the whole right side of the colon, even though the growth itself may be small and not seem to demand such an extensive resection. Personal experience has shown better results by this method than by smaller resections with preservation of part of the ascending colon or the hepatic flexure. The same principle is employed with growths on the left side from the splenic flexure to the sigmoid. Here the anastomosis is done between the transverse colon and the sigmoid. The operation is more difficult on the left side because of high position of the splenic flexure. For growths in the transverse colon and the sigmoid, a sufficient segment of gut containing the tumor, with the associated mesentery and glands is resected, and the two ends anastomosed. Formerly the writer employed the Parker-Kerr aseptic end-to-end type of anastomosis, and found it a very satisfactory operative procedure. Three subsequent strictures, one in the transverse and two in the sigmoid, have led to its abandonment, however, except where scantiness or immobility of bowel makes a lateral anastomosis impractical. Where there has been no obstruction, and the operative technique has been carried out in a satisfactory manner, no enterostomy as a safety valve is made proximal to the anastomosis, although many other surgeons do this as a routine. In doubtful cases it is advisable. A final word about a particular operation—although this paper has avoided the discussion of detailed operations. The writer shares the views of Rankin and others on the undesirability of the original Mickulicz method of dealing with growths in the colon, and considers that where some such procedure is necessary, the Rankin modification, known as obstructive resection, is much to be preferred. The writer has had no experience with radium or x-ray in the treatment of growths in the colon, either as an adjunct to operation or alone, although he has used it extensively in inoperable growths of the rectum.

Surgical Treatment of Obstructions.—To take up next the surgical treatment of cases with obstruction, one proceeds along entirely different principles. Here it must be recognized that a complication of the growth (or obstruction) has become for the time paramount in immediate importance to the tumor itself. The elaborate preparation described above for unobstructed cases is reduced to the washing out of the stomach and the administration of intravenous glucose and saline solution. The abdomen is opened, a brief exploration made to discover, if possible, the exact location of the growth, and a cecostomy done with a good-sized tube unless the cecum itself is involved, in which case ileostomy is performed. If the patient recovers from the obstruction, the second definitive operation is undertaken two weeks or more later, and follows the lines indicated above for the radical cure of the disease. The cecostomy will close spontaneously in many instances after the removal of the growth, but occasionally a third operation may be required to close it.

There has been a great deal of interest constantly directed toward the cure of malignancies in the alimentary tract, and this very natural concentration upon a permanent end-result has been the predominant objective in the surgical measures adopted. As a consequence of this attitude, palliative surgery of growths within the abdomen has in practice generally been limited to the relief of obstruction. Obstruction, when it occurs in a segment of the alimentary canal that permits a short circuiting anastomosis, has been handled by operations of that type and in other regions, such as the lowermost part of the sigmoid and rectum, and the cardiac end of the stomach has been dealt with by making artificial openings to the exterior to permit either the introduction of food or the escape of fecal material. It is one purpose of this paper to awaken interest in the possibility of doing more good for the patient by bolder and more radical attack on the primary disease, even when there exists no hope of permanent cure.

REPORT OF CASES

To illustrate in a concrete way what the writer has in mind, a few cases that have been done within the last two or three years will be cited as illustrations.

Case 1.—Carcinoma of the ascending colon. Patient was a man of fifty-four, markedly anemic, with much loss of weight and great constipation. Operation disclosed a large growth in the bowel and palpable glands extending along the vessels as high as the aorta in the region of the renal arteries. The right side of the colon with a few inches of ileum was resected, and an anastomosis done between the lower ileum and the transverse colon. Patient lived about two years and a half, and died finally with extensive abdominal carcinomatoses. During the interval, however, he had been able to resume his occupation as a shoemaker and made a notable, although temporary, gain in weight, strength, and blood count.

* * *

Case 2.—Similar in all respects to the one just cited. Same type of operation was done. Patient died, however, from pneumonia on the sixth day after operation. Autopsy showed that there remained behind a number of glands along the aorta that were involved in carcinoma, a condition which was known to exist at the time the operation was done. There have been two other cases of growth in the right side of the colon in which the principles involved, and the operation performed, were similar to these cases cited.

* * *

Case 3.—Carcinoma of the splenic flexure of the colon. Woman of about sixty-three years of age, first seen with acute intestinal obstruction. Exploration revealed a small scirrhus growth in the splenic flexure and some nodules in the liver. A cecostomy was done for the immediate relief of the obstruction, and two weeks later the growth in the splenic flexure was resected, including practically all of the descending colon, and an anastomosis was made between the transverse colon and the sigmoid. The anastomosis leaked, and a fecal fistula developed with some breaking down of the second incision. The patient, however, survived this condition and lived for about three months, at which time she died rather suddenly with a circulatory collapse considered due either to an acute myocardial failure or coronary occlusion. No autopsy was secured.

* * *

Case 4.—A man fifty-eight years of age, operated upon for obstructive symptoms in the sigmoid which was found to contain a carcinoma about the middle of the loop. The growth was resected with its mesentery as far as the inferior mesenteric vessels, but large glands that felt definitely malignant could be palpated considerably beyond the reach of operable removal. An end-to-end anastomosis was done between the two stumps of the sigmoid loop. Patient made an uninterrupted recovery, and is still living and well after two years.

* * *

Case 5.—Woman of about thirty-five, similar in all respects to the case just cited, with a growth in the mid-sigmoid. This growth was removed with its mesentery by the Rankin obstructive resection method, but it was felt that glands beyond the reach of removal were definitely involved. A delayed anastomosis was done at a secondary operation, and this patient is still living and well after about two years.

There have been at least four or five other cases similar in all important respects to the last two.

COMMENT

It will be seen that during the last few years the writer has performed radical resections in a number of cases in which there was no expectation of permanent cure at the time the operation was performed. These cases all gave clinical evidence of the extension of the disease beyond the reach of radical removal, and in such cases it has been the general practice to do one of two things. First, if there seems no imminent danger of obstruction, to close the abdominal incision after exploring, and allow the conditions to remain undisturbed. Second, when obstruction seems imminent, to do some form of short-circuiting operation by anastomosis of the alimentary tract above and below the site of the growth. The reasons which induced departure from this customary plan of procedure are as follows: First, the desirability of removing the growth if that can be done without too formidable an operation. It is obvious that such removal will at once put a stop to the bleeding, ulceration, infection and absorption that are bound to continue from the surface of a gastro-intestinal cancer, even although a short-circuiting operation has been performed. It is evident that, if such an operation succeeds, the patient will secure a much more pronounced beneficial effect in the quicker restitution of the quality of his blood, the freedom from absorption, the decrease in discomfort and pain, perhaps the disappearance of a palpable mass, and in the psychic benefit to be derived from the assurance that the growth has actually been taken out. Second, in these cases there is very little to lose. If our diagnosis be correct, such patients are going on to inevitable death in a fairly short time, and should some accident or misfortune take place as a result of the operative procedure, this inevitable outcome is simply anticipated by a short period of time. From the humanitarian standpoint, it may fairly be maintained that a patient who dies quickly after such an operation is more fortunate than one who lingers on for somewhat longer time, slowly dying with a growth in his abdomen. It seems to the writer, therefore, that his efforts to do more extensive palliative operations are entirely justified, both in theory and in practice, and he would urge that where inoperable malignancy in the gastro-intestinal tract permits of not too difficult removal, that the standard procedure should be resection since that affords the greatest measure of palliation. The distinct impression has also been obtained that life after such resections is not only more comfortable, but considerably longer. The underlying idea in this more aggressive palliative treatment of inoperable growths is the old and accepted principle of treating the patient and not the disease.

There is another type of malignancy of the large bowel in which resection is perhaps too formidable to be justified unless it carries with it the hope of a permanent cure. Such a situation is illustrated by carcinoma of the lowermost sigmoid, or of the rectum with, let us say, nodules in the liver. To remove such a growth is a major procedure in every sense of the word, and would leave the patient afterward with a permanent colostomy. This seems too much of a price to pay with too little gained in a case where cure cannot be hoped for. In these cases, the question of palliation resolves itself into provision of an outlet for fecal contents in case obstruction should develop. It is customary for the surgeon to try to estimate whether obstruction is threatening or will be long-delayed. If he thinks that obstruction is about to ensue, he will probably do a colostomy in the sigmoid above the growth. If, on the other hand, he believes that the patient's life may terminate from the disease before obstruction takes place, no colostomy will be performed. In such cases the writer has employed a device which does away with the necessity of trying to read the future. After the situation has been explored and hope of radical cure abandoned, a small left-sided McBurney incision is made. The sigmoid is drawn into this incision, so that a small cone of bowel, representing about one-fourth of its circumference, extends beyond the skin level. This protruding cone of bowel is fixed to the skin of the incision with a few silk sutures. The midline exploratory incision is then closed. The protruding portion of sigmoid soon becomes adherent to the abdominal wall, its serosa is rubbed off and replaced by a thin film of epithelium growing from the skin edges. The patient then has what resembles in every respect a small incisional hernia on the left side containing the attached sigmoid loop. Arrangements are now completed by which any development in the progress of the disease may be dealt with to best advantage. If obstruction never takes place, the patient is allowed to go to his end without the distress and inconvenience of a colostomy. On the other hand, if obstruction does occur, it can be relieved at once without any anesthetic or further operative procedure by simply plunging a knife into the protruding small portion of the sigmoid. In every case the maximum comfort and the minimum of pain, expense and worry, are provided for the patient. This procedure, which I have designated as precolostomy, I have used in a considerable number of cases of inoperable cancer of the rectosigmoid region, and have felt that it is a very considerable addition to the surgical resources in this field of work.

18 West Franklin Street.

THE FUTURE OF ANESTHESIOLOGY AS A MEDICAL SPECIALTY*

By Caroline B. Palmer, M. D.
San Francisco

What causes have led to the equivocal position of anesthesiology?

Is the present trend for or against improvement?

Is anesthesiology a medical specialty?

If this specialty should be put on a strictly professional basis, would an adequate number of properly trained anesthetists be available?

Anesthesia, in the modern sense, dates from the demonstration of the anesthetic properties of ether in 1846, and shortly afterward of chloroform.

EARLY ATTITUDE TOWARD ANESTHESIA

From the beginning, the attitude of the medical profession of America toward this new and revolutionizing subject was different from that of England. This difference may be partly accounted for by the fact that for several years ether was the chief agent used in America, while chloroform early was favored in England. The relative margin of safety of these two anesthetics was, doubtless, one reason why in America it was believed that practically anyone could administer anesthetics, but in England this work was confined, almost from the start, to the medical profession.

In England, too, shortly after the introduction of anesthetics, the medical profession began to develop the science and art of anesthesia as a medical specialty. Snow's anesthetic research dates from about 1847. Snow was followed by Clover, and Clover by Hewitt. It was in the latter's era that the London Society of Anesthetists was formed, which ultimately became the Section on Anesthetics of the Royal Society of Medicine.

---

* Chairman's address, Anesthesiology Section of the California Medical Association at the sixty-second annual session, Del Monte, April 24-27, 1933.

Several things happened in England which gave anesthesia prestige: Queen Victoria put her seal of approval on Simpson's method of pain relief in childbirth; Clover anesthetized Napoleon III after his escape to England; and Hewitt administered an anesthetic to Edward VII, in recognition of which he was knighted.

ATTITUDE TOWARD ANESTHESIA IN AMERICA

Meanwhile, in America, the birthplace of anesthesia, physicians, medical students, and others were simply learning to do by doing, at the expense of patients, surgeons, and the entire medical profession. The natural result was that in our own country, anesthesia became the stepchild of the medical profession, and anesthesiology, born forty years later, is still suffering because of the inherited stigma.

The psychologic attitude of the medical profession toward the entire subject is puzzling.

It seems strange that among the wise physicians of that day, some did not reason that an agent powerful enough to carry patients to that mysterious region between life and death could not be foolproof.

Naturally, however, it was not long before anesthetics and anesthesia began to interest research workers; and in time, actual knowledge was gained, replacing to some extent mere opinion, prejudice, and the arrogance of ignorance. In the nineties, the Brooklyn Society of Anesthetists was organized, which later gave way to the New York Society of Anesthetists. In 1912, a group of medical anesthetists and research workers attempted to secure a section in anesthesia in the American Medical Association, but failed. The following year the American Association of Anesthetists was arranged as a separate organization; but this association, unfortunately, was conceived as a limited society of one hundred members—a fatal mistake.

DEVELOPMENT OF SOCIETIES OF ANESTHETISTS

In 1915 the Interstate Society of Anesthetists was formed by some forward-looking medical anesthetists, prominent among whom was Dr. F. H. McMechan, now our secretary-general; and from this organization were developed our present local, regional, and national societies of anesthetists, and the International Anesthesia Research Society.

The members of these various organizations are all working toward increased knowledge of anesthetic agents and improvement in clinical methods; to the end that patients may have the safest and least disagreeable type of anesthesia, and that surgeons may be unhampered in their work. Progress has been significant, and all of these things should lead to a degree of perfection in our specialty beyond anything as yet known. But there is another side to the picture.

Unfortunately, certain of the physicians who became interested in anesthesiology found the practical work too wearying, and in some instances turned the actual administration of anesthetics over to technicians. A considerable number of surgeons and hospital executives were quick to see the convenience and economic advantage of such an arrangement, and so the anesthetic technician became recognized.

NONMEDICAL ANESTHETICS

In other words, hundreds of nonmedical persons were and still are permitted to practice medicine. This seems like carefully cultivating an orchard and then allowing the fruit to be blighted. Of what avail the research, the hard work, unless we are to realize the benefit in safer and better anesthesia?

Even the convenience and economic advantage, which are the fundamental reasons for permitting the employment of anesthetic technicians, will not bear close scrutiny; but as this part of the subject is considered in another paper on our program, I shall say no more here than seems necessary.

Is it correct to say that these technicians are practicing medicine? No anesthesia can be safe unless the anesthetist can and does diagnose the patient's condition at every step of the way, and is competent to order supportive treatment if indicated. Can the technician do this? Not even those who sponsor anesthetic technicians make any such claim. What they do say is that the surgeon supervises the anesthesia, and that the technician simply carries out his orders. Is this possible? Can any surgeon do his work properly, and at the same time keep in mind the exact condition of the patient from minute to minute? The most that surgeons do in this respect is to ask occasionally, "What is the pulse?" and the chances are ninety-nine to one that the reply is not even heard. Others make a practice of saying at a certain stage in the operation, "The blood seems a little dark." Is this supervising the anesthesia? Anyone who has knowledge of the subject knows that it is not—that there is no such thing as a supervised anesthesia unless the one supervising gives the matter his entire attention. That being the case, why the technician?

SOME PERSONAL EXPERIENCES

A ridiculous incident which occurred in my early experience has some bearing on this part of the subject. A friend telephoned me that her cat had met with an accident and had a broken leg. Would I come and fix it? I went. After anesthetizing the cat, I showed my friend how to continue the administration of the anesthetic while I reduced the fracture. I cautioned her to let me know if any change occurred in the cat's breathing. I then became intent upon my surgical work. After a time, my friend said, "I believe that Sammy is not breathing." He was not. In fact, he appeared to be very dead. However, I was fortunate enough to revive him, after which I finished with the leg as quickly as possible, wishing to avoid further anesthetic. That cat never did have a really beautiful leg, but he was alive, which was more than I deserved under the circumstances.

May I be permitted to mention some other instances that illuminate my subject?

Years ago I was called to anesthetize a patient who had developed mastoiditis in the course of pneumonia. He was desperately ill, his heart being in an especially alarming condition. The surgeon asked me to give chloroform because of the pneumonia. I mentioned the heart condition, but he insisted that chloroform was the least of evils. I said that a patient in the condition of this one would not live through even induction with chloroform. The reply was, "Well, what are we to do?" I suggested local. "No, impossible." Nitrous oxid and oxygen? "No." At last in desperation, I said, "I am sorry, but I must refuse to act as executioner. Gas is the only general anesthetic possible in his condition." Finally the surgeon consented, and I gave nitrous oxid and oxygen with the only apparatus then available—a first-model Teeter machine with no pressure control, with nitrous oxid cylinders holding one hundred gallons, and oxygen cylinders with a capacity of forty gallons. The operation required two hours, and when it was finished I felt years older; but the patient was alive and uninjured by his anesthetic. What would an anesthetic technician have done in this case?

Again, a splenectomy was in progress. The patient's condition became unsatisfactory. I told the surgeon. No response. That particular surgeon would have been unwilling for anyone except himself to order the treatment which the patient's condition clearly indicated. In a short time, I remarked that the patient's condition was becoming steadily worse. Still no reply. At last I said, "The patient's condition is desperate." At this, the surgeon looked up and asked an internist who was present to see what was wrong. The internist felt the pulse and, without making any further investigation, said, "The patient is quite all right." Half an hour later the patient was dead.

On a later occasion I was giving an anesthetic for this same surgeon. The patient weighed eighty-seven pounds. There was considerable hemorrhage—not enough to be serious for an adult of average size, but too much for this 87-pound woman. Again I warned the surgeon. This time he was irritated, but finally asked a physician standing by to see what he thought of the patient's condition. As this man leaned over to feel the pulse, I muttered in his ear, "If you say that she is all right, her blood be upon your head." He did not say it. The operation was stopped, and the patient put to bed. The surgeon then remarked, "I had no idea that she could possibly be in such condition." The operation was finished a few days later, and the patient recovered.

COMMENT

Doubtless other pioneer medical anesthetists have had experiences similar to these, and I mention them simply to bring out the fact that the work of anesthetists is, and of right ought to be, the practice of medicine—that the anesthetist should be shown the same consideration in his specialty that is shown the members of other medical specialties.

The incidents mentioned occurred more than twenty years ago. I trust no one will think that any criticism of the surgeons with whom I have worked for many years past is intended. In fact, the members of the anesthetic department in the institution with which I have the honor to be connected, have reason to feel fortunate in the attitude toward anesthesiology of the medical school authorities, surgeons, internists, and hospital executives.

One of the common arguments used by those who favor anesthetic technicians is that it would be impossible to provide a sufficient number of medical anesthetists to fill the need. Is that a statement of fact? According to the final report of the Commission on Medical Education, published January, 1933: "There are more physicians in the United States than are needed to provide an adequate medical service for the country. The United States has more physicians per unit of population than any other country in the world; twice as many as the leading countries of Europe."

From this report it seems evident that we have more than enough physicians to attend to all branches of medical practice, and that the employment of technicians for work which should be done by physicians is not only unnecessary, but is a short-sighted policy.

Why should we add to our constantly increasing oversupply of physicians a large class of pseudo-physicians? Is the medical profession to follow the same destructive policy which has worked such havoc in the world of business and industry?

Anesthetists should not only be physicians, but physicians who, in addition to their medical education, have had sufficient instruction and training in this particular branch of medical practice to prepare them to meet the demands of this difficult and exacting specialty—the specialty of modern anesthesiology.

Do young physicians want this training? They certainly do. Every anesthetist in a teaching position knows this to be a fact. All we need is due recognition of our specialty, and we can and will supply an adequate number of trained medical anesthetists to meet all requirements.

FUTURE OF ANESTHESIOLOGY AS A SPECIALTY

The future of anesthesiology as a medical specialty in our country depends entirely upon whether or not the American medical profession is sufficiently ethical to keep the practice of medicine in the hands of physicians. This truth applies with particular force to the medical anesthetists who have yielded to pressure and are teaching or supervising technicians. Anesthetists must not only be physicians, they must be ethical physicians.

We, as medical anesthetists, should present a united front in this matter. We must not try to get ahead of each other, but try to get ahead with each other. We must accept every discouraging circumstance as a challenge to greater effort.

"Then, welcome each rebuff
That turns earth's smoothness rough,
Each sting that bids nor sit nor stand, but go!"

2557 Clay Street.

A STUDY OF FIVE HUNDRED CONSECUTIVE AUTOPSIES ON CHILDREN *

By C. M. Hyland, M. D.
Los Angeles

Discussion *by William M. Happ, M. D., Los Angeles; A. G. Foord, M. D., Pasadena.*

Epstein [1] recently presented a review of the records of one thousand consecutive autopsies on children and stated that, in a careful search of the medical literature for the past twenty years, he had failed to find a like report. The following report presents a series of five hundred consecutive autopsies on children, and for convenience in comparison the general plan of presentation as followed by Doctor Epstein will be followed in part in this paper.

The autopsies analyzed represent deaths from December 1, 1928, to December 13, 1931, and represent 95.8 per cent of all deaths during that time, occurring in the Children's Hospital, Los Angeles. In 98.2 per cent of the autopsies there was a complete examination of the thorax and abdomen. In 39.4 per cent the brain, paranasal sinuses and mastoids were examined, and in 1.8 per cent examination was limited to the site of the suspected lesion.

The hospital admits children up to the twelfth birthday. However, three cases of acquired heart disease are listed in Table 1 that passed their twelfth birthday as patients in the hospital, dying soon afterward. All specialties are represented in the hospital services.

All nationalities are admitted to the hospital, and cases of contagious disease developing after admission are immediately removed. The following races are represented in this group of cases: whites, negroes, Japanese, Chinese, Mexicans, and Filipinos.

Table 1 gives the causes of death for both sexes in the various age groups.

FINDINGS FOR DIFFERENT DISEASES

Pneumonia.—In the fifty-eight cases of pneumonia listed, both sexes were equally represented. By far the greatest per cent of deaths from this cause was in the first year of life. Pneumonia in some degree was present in two hundred forty-nine bodies. Bronchopneumonia accounted for thirty-six deaths. In twenty-two cases both sides were involved, and in fourteen cases either right or left side alone. Lobar pneumonia accounted for fourteen deaths. In five cases the upper right lung was involved, in one case the lower right lung, in four cases the entire right lung, and in two cases there was involvement of both sides. The lower left was involved in two cases, showing the lobar type of pneumonia. Six cases showed acute interstitial pneumonia. In five of these cases both lungs were involved, and in one case only the right middle lobe was affected. One case showed influenzal pneumonia with involvement of both sides, and one case died of an aspiration pneumonia. Ten of the fourteen cases of lobar pneumonia showed an acute pleural involvement, while only seven cases of the thirty-six of bronchopneumonia showed gross evidence of pleurisy. Four cases of the pneumonia series showed the presence of chronic adhesive pleuritis. The single case of influenzal pneumonia had a mild fibrinous pleurisy over the involved area. Pleurisy is supposed to accompany a pneumonic process that exists near the lung surface, but I feel that most pathologists consider it a part of lobar pneumonia rather than proximity of the lesion to the surface.

Tuberculosis.—Tuberculosis was the cause of death in fifty-three cases divided almost equally between males and females, the larger number dying of this condition between two and five years of age. In forty-eight cases miliary tuberculosis was present, showing almost universal involvement of both lungs, liver and spleen, and in a fair number tubercles in one or both kidneys were found if examined carefully. Ulcerative tuberculosis with cavitation was present in four cases. In three the cavity was present in the upper right, and in the fourth case it was located in the upper left lobe. Tuberculous meningitis was found in forty-two cases, and in one case *Streptococcus viridans* was obtained from the spinal fluid before death, but the brain showed only the tuberculous lesion. In one case a tuberculoma was located in the left lateral ventricle and projected into the lumen of this cavity. The bronchial lymph glands were caseous in virtually all cases. Tuberculous ulceration of the intestines was present in sixteen cases. In one case a massive torsion of the omentum due to omental tuberculosis was present. Three cases showed tuberculous pleuritis, and seven cases showed definite tuberculosis of the pleura. In one case of tuberculous meningitis many tubercles were found in the dura overlying both parietal lobes. Thirteen cases showed caseous tuberculosis of the mesenteric lymph glands. Two cases showed a tuberculous mastoiditis, and one case showed a tuberculosis of both adrenals. Four cases showed tuberculosis of the thymus, one case a tuberculous myocarditis, and one case a symptomatic purpura. One case had a Pott's disease of the upper dorsal vertebra with a cold abscess of the mediastinum. There was also a case of tuberculous pericarditis which was the same case showing tuberculous myocarditis.

Septicemia.—Twenty cases were classified as dying from septicemia. Eight of the twenty cases began as an osteomyelitis, and one of these showed *Streptococcus hemolyticus* and one *Streptococcus viridans* on blood culture. In one the organism was not identified. The remaining five showed *Staphylococcus aureus* on blood culture. Two cases with repeated positive blood cultures of *Streptococcus viridans* showed ulcerative endocarditis at autopsy. One case of ulcerative endocarditis, following an abscess of the penis due to trauma, showed *Staphylocossus aureaus* on re-

---

* From the Pathologic Laboratories, Los Angeles Children's Hospital.

* Read before the Pathology and Bacteriology Section of the California Medical Association, at the sixty-first annual session, Pasadena, May 2-5, 1932.

TABLE 1.—*Causes of Death*

	First Month		One to Twelve Months		One to Two Years		Two to Five Years		Five to Ten Years		Ten to Thirteen Years		Total		Total
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Pneumonia	3	3	20	20	5	3	..	3	1	..	..	..	29	29	58
Tuberculosis	..	..	5	2	13	6	8	16	2	..	1	..	29	24	53
Septicemia	2	..	4	3	1	..	..	3	3	2	1	1	11	9	20
Purulent meningitis	..	1	6	3	5	6	3	4	4	8	..	..	18	22	40
Contagious disease	..	..	1	..	..	..	2	..	..	..	1	1	4	1	5
Heart disease (acquired)	..	..	..	1	..	..	..	2	2	4	2	4	4	11	15
Congenital malformations	6	7	15	5	1	2	..	..	..	..	..	..	22	14	36
Prenatal syphilis	..	2	3	3	..	..	..	..	..	..	..	..	3	5	8
Purulent pleuritis	..	..	2	1	3	1	2	..	..	..	..	..	7	2	9
Enterocolitis	4	4	14	29	2	1	..	..	..	..	..	..	20	34	54
Atelectasis	7	4	..	..	..	..	..	..	..	..	..	..	7	4	11
Prematurity	11	13	1	4	..	..	..	..	..	..	..	..	12	17	29
Malnutrition	2	..	4	4	..	..	..	..	..	..	..	..	6	4	10
Status lymphaticus	..	..	2	2	1	3	..	..	..	1	..	..	3	6	9
Intussusception	1	..	3	..	..	..	..	..	..	..	..	..	4	..	4
Neoplasm	..	..	2	1	1	1	1	2	2	5	1	..	7	9	16
Mastoiditis	..	..	11	5	5	1	..	1	1	..	..	..	17	7	24
Peritonitis	1	..	1	4	..	..	4	..	2	1	..	..	8	5	13
Nephritis	..	..	2	1	1	1	1	1	2	2	1	..	7	5	12
Cerebral hemorrhage	5	1	..	..	..	..	..	..	..	..	..	..	5	1	6
Encephalitis	..	..	2	2	1	..	..	..	..	..	..	..	3	2	5
Surgery	..	..	2	..	..	..	..	1	..	..	..	..	2	1	3
Accident	1	..	1	..	2	..	1	..	..	..	..	..	3	2	5
Diseases of the blood	1	..	..	..	1	..	1	1	3	..	..	..	6	1	7
Dysentery	..	..	5	2	3	..	2	1	..	1	..	..	10	4	14
Diabetes	..	..	..	..	1	..	1	..	1	..	..	..	3	..	3
Yellow atrophy of liver	..	..	..	..	..	..	2	..	..	..	..	..	2	..	2
Cirrhosis of liver	..	..	..	..	..	..	1	..	..	..	..	1	1	1	2
Tetanus	..	..	..	..	..	..	1	..	..	..	1	..	2	..	2
Ulceration of esophagus	..	..	1	..	1	..	..	1	..	..	..	..	2	1	3
Miscellaneous	..	..	1	2	1	4	..	..	1	2	1	1	4	9	13
Undetermined	1	1	3	2	..	1	1	..	..	..	..	..	5	4	9
Totals	45	36	111	96	48	30	31	36	24	26	9	8	266	234	500

peated blood culture. One case with a marked ulceration of colon and lower jejunum showed on repeated blood cultures *Bacillus pyocyaneus,* and this organism was also recovered from the ulceration at autopsy. It was also found before death from a yellowish membrane that covered both tonsils. Three cases started with a multiple furunculosis, and in one *Streptococcus viridans* was isolated from the blood stream. One case followed an infection of the finger and showed *Staphylococcus albus* on blood culture. Four cases died about the time of admission, and cultures could not be taken; however, all presented every anatomical evidence of septicemia. Two were classified as sepsis of the newborn, one had an abscess of the kidney, and one a massive abscess of the chest wall. In two cases the organism was not identified.

Meningitis.—Meningitis was present in eight-two instances, forty being of the purulent variety and forty-two being tuberculous. In one case a *Streptococcus viridans* was cultured from the spinal fluid, and this case showed tuberculous meningitis at autopsy. A purulent exudate was not present on the brain surface. However, hyperemia was pronounced, and in this respect, in addition to the tuberculous lesion, the brain resembled the hyperemic type of lesion found rarely in *Streptococcus meningiditis, i. e.,* hyperemia without exudate. Table 2 follows, showing the causative organism present and distribution according to age groups in the meningitis series.

Contagious Diseases.—Contagious diseases accounted for five deaths; one male, eleven years of age, dying of a diphtheritic trachitis and bronchitis and an acute nonsuppurative myocarditis. Postdiphtheritic myocarditis caused the death of one male ten months of age and a female ten years of age. One male, four years of age, died of a postdiphtheritic paralysis of the diaphragm. One male, three years of age, died of postmeasles, pneumonia and empyema and mastoiditis.

Heart Diseases.—Fifteen cases of acquired heart disease were encountered in this series. Eleven cases showed acute valvular lesions, and four cases showed chronic valvular lesions. The pericardium was involved in thirteen instances, six cases showed acute fibrinous peri-

TABLE 2.—*Causative Organisms in the Meningitis Series*

Age	Tubercle Bacillus	Meningococcus	Pneumococcus	Influenza	Streptococcus Beta	Streptococcus Alpha	Streptococcus Type Undetermined	Staphylococcus	B. Coil	B. Enteritidis	Undetermined	Total
First month	..	..	..	..	..	..	..	1	..	..	..	1
First year	2	1	2	..	..	..	3	1	1	..	1	11
One to two years	16	1	2	4	..	2	1	..	..	1	..	27
Two to five years	21	..	1	2	..	2	2	..	..	..	..	28
Five to ten years	2	..	..	1	2	4	3	..	..	..	1	13
Ten to twelve years	1	..	..	..	..	..	1	..	..	..	..	2
Totals	42	2	5	7	2	8	10	2	1	1	2	82

carditis, two cases subacute pericarditis, four cases chronic adhesive pericarditis, and one case purulent pericarditis. The various lesions were distributed, as in Table 3.

In ten of the cases Aschoff bodies were recognized in the histologic examination of the heart muscle.

Congenital Malformations.—Table 4 shows the type of congenital malformations found in this series. A total of ninety-four malformations were found in fifty-eight children. In thirty children one anomaly only was found, while in the remaining twenty-eight there were more than one anomaly present. Death was attributed to the malformation in thirty-six cases, and deaths from this condition were more frequent in the first year of life.

Of the cardiac anomalies all cases showing a defect of the interventricular wall also showed a patent foramen ovale. It is interesting to note that of the four mongolian idiots in this series, all four had heart defects, three having large defects of the interventricular wall with foramen ovale, and the other one a large interauricular defect measuring 1.3 centimeters in diameter with a normal ventricular septum. In six cases cardiac anomalies were associated in each instance with one or more other defects, as cleft palate, cleft lip, abdominal cryporchidism, supernumerary digits, etc.

Prenatal Syphilis.—Eight patients died of this cause, and all of the deaths were in the first year of life. In all eight cases the causative organism was demonstrated by special stains in various tissues. The liver was the most frequently involved of all organs, next in frequency being the lungs. One of the cases dying in the first month showed a large gumma of the left ventricular wall. None of the cases dying of this condition showed the presence of any congenital anomaly.

TABLE 3.—*Distribution of Heart Lesions*

Mitral only	5
Mitral and aortic	2
Mitral and tricuspid	3
Mitral, tricuspid and aortic	4
Mitral, aortic and pulmonic	1
Mitral, pulmonic and tricuspid	0
All valves	0
Tricuspid only	0
Pulmonic only	0
Aortic only	0
Acute fibrinous pericarditis	6
Chronic adhesive pericarditis	4
Subacute pericarditis	2
Purulent pericarditis	1

Purulent Pleuritis.—This condition was present in nine instances. In five cases it was limited to the left side, and in the remaining four to the right side. In no instance was it bilateral. Cultures from the fluid showed in three instances a streptococcus, in two a staphylococcus, in one a pneumococcus, and in three instances the organism present was not determined.

Enterocolitis. — The term "intoxication," as used by Epstein to indicate cases showing fatty infiltration in the liver and dehydration of the

TABLE 4.— *Congenital Anomalies*

Heart.	
Patent foramen ovale	15
Patent ventriculum septum	10
Transposition of aortic and pulmonic arteries	3
Patent ductus arteriosis	2
Biatria trilocularis	1
Coarction of pulmonic artery	2
Rudimentary mitral valve	1
Congenital pulmonic stenosis	1
Anomalous origin of coronary artery	1
Genito-Urinary.	
Obstruction:	
Unilateral	6
Bilateral	5
Double pelvis:	
Unilateral	1
Bilateral	..
Double ureter:	
Unilateral	2
Bilateral	..
Hypospadias	1
Horse-shoe kidney	1
Absent kidney	1
Extrophy of bladder	1
Gastro-Intestinal.	
Pyloric stenosis	4
Intestinal obstruction	1
Imporforate rectum	1
Meckel's diverticulum	4
Bile duct stenosis	1
Miscellaneous.	
Cleft palate	9
Cleft lip	6
Spinal bifida	3
Hydrocephalus	1
Club feet	1
Extra digits	2
Mongolian idiocy	4
Recto vaginal fistula	1
Laryngeal stenosis	1
Bilateral abdominal cryporchidism	1

TABLE 5.—*Neoplasms*

Sex	Age	Primary	Type	Metastasis
F.	11 mos.	Cerebellum	Medulloblastoma	None
F.	2 yrs.	Cerebellum	Medulloblastoma	None
F.	3 yrs.	Cerebellum	Medulloblastoma	None
M.	6 yrs.	Cerebellum	Medulloblastoma	None
F.	6 yrs.	Cerebellum	Medulloblastoma	None
F.	8 yrs.	Cerebellum	Medulloblastoma	None
M.	11 yrs.	Cerebellum	Spongioblastoma Multiformae	None
M.	5½ yrs.	Right kidney	Embryonal adeno sarcoma	Both lungs, retroperitoneal glands
M.	6 yrs.	Left kidney	Embryonal adeno sarcoma	Ribs, spinal column, skull, dura, right lung
F.	6 yrs.	Left kidney	Embryonal adeno sarcoma	Liver, spleen, right lung
M.	4 mos.	Right adrenal	Neurocytoma	Liver, lymph glands about common duct
M.	1 yr.	Right adrenal	Neurocytoma	Liver and bones
F.	9 yrs.	Left femur	Ewing's tumor	Pelvis, vertebra, ribs, lungs and dura
M.	7 mos.	Spinal canal	Epidural lipoma	None
F.	2¾ yrs.	Thymus	Thymoma	Pleura, pericardium, retroperitoneal glands, both kidneys
M.	2½ yrs.	Intestines	Sarcoma	Cervical inguinal and iliac glands, both kidneys

body, coupled with a history of anhydremia and cholera infantum, is not used in this series of cases, and it is possible that under the term "enterocolitis" some cases are listed that would answer to the description of the term "intoxication" as used by this author. In many of the cases the intestinal lesions found at autopsy were not of a severe degree; nevertheless, hyperemia and desquamation of the mucosa were present. In all cases, however, rather marked gastro-intestinal symptoms were present before death.

Status Lymphaticus.—Nine cases appear in this series showing rather classical anatomical evidence of this condition. In all cases death was rather sudden, in most cases entirely unexpected. Autopsy findings showed constant hyperplasia of lymphoid glands, hyperplasia of solitary follicles and Peyer's patches in the intestinal tract, multiple subepicardial and subpleural hemorrhage with an absence of other prominent findings. The average weight of the glands was 24.1 grams. The individual weights ranged from 15 to 40 grams. One gland only in this group of cases weighed as little as 15 grams. It is the feeling of the writer that the accepted standards of weight of the thymic gland in infants and children is much too high; seldom, if ever, does a thymus at birth weigh as much as the accepted standard. The lesions characterizing the so-called thymic death have been observed too frequently not to feel that this is a distinct entity though the thymic gland of itself is not markedly increased in weight. In other cases in this series outside those now under consideration, some had certain findings suggesting a thymic taint. However, the presence of a lesion capable in itself of causing death, even though the lesion was not of a severe degree, caused these cases to be classified otherwise, regardless of any personal feeling in the matter.

Neoplasms.—There were sixteen tumors causing death, of which seven were intracranial, all being located in the cerebellum. Three primary tumors of the kidney were encountered, all showing rather extensive metastasis. Two neurocytomas, both primary, in the right adrenal were encountered and orbital metastasis was not present in either case. Bone metastasis was present in one case, the first symptom in this case being a pathologic fracture of the left humerus. A Ewing's tumor was found in one instance showing extensive metastasis to bones. One case showed an extensive epidural lipoma of the spinal cord. Diffuse gastro-intestinal sarcoma and a thymoma both occurred once. Table 5 gives additional data on this group of cases.

Mastoiditis.—Of the twenty-four cases of this condition, nineteen were bilateral and five unilateral. In some cases more than one organism was cultured from the pus obtained at autopsy. Table 6 shows the various organisms recovered and the number of times present.

Peritonitis.—Of the thirteen cases dying of this condition the process was general in twelve and localized in one. In five cases a perforated appendix was the causative factor.

Nephritis. — No example of a pure tubular lesion was found in this series. Two cases were rather typical clinically of a lipoid nephrosis. However, at autopsy these cases represented the

TABLE 6

Organism	Times Present
Streptococcus alpha	12
Staphylococcus	6
Streptococcus beta	1
B. pyocyaneus	2
B. xerosis	1
B. coli	4
B. fecalis alkaligenes	1

mixed type. One case was considered mixed during the course of illness. Four cases were of a chronic diffuse type, three cases of an acute diffuse type, and two cases died of acute interstitial nephritis with no other significant lesion,

Cerebral Hemorrhage.—In the six instances of this condition the hemorrhage was subtentorial in three instances. In one case the hemorrhage was over the left occipital lobe, in another over the superior surface of the cerebrum, and in the other case hemorrhage occurred into both lateral ventricles.

Encephalitis.—Two of the cases of this condition were characteristic of the variety described by Symmers and called by this author "toxic encephalitis." The other cases were characterized by congestion, and marked round-cell infiltration.

Surgical Operations.—Of the cases listed under this heading, two died of pneumonia, one operated for a massive cystic hygroma, a second for hernia and appendix, and one patient died following repair of a cleft lip.

Accident.—Of the accidental deaths one was due to ulceration and perforation of esophagus, following the swallowing of a sharp stone. One case died of a mediastinitis, following perforation of esophagus with a safety pin. One case died as the result of ant-paste poisoning, one died following hydrochloric-acid poisoning, and one died as the result of a lye burn of the esophagus.

Diseases of the Blood.—Seven patients died of the various blood dyscrasias. In this group were four leukemias, one typical myeloid leukemia, and three of the aleukemic lymphoid variety. All three of the latter patients were under observation from early in the illness and had repeated blood examinations, the highest white count charted in any case being 7,150. In all cases before death lymphocytes were high, reaching 93 per cent in one case. This lymphocytosis was marked on admission in two of the cases, and in one case lymphocytes were high, reaching 70 per cent one week after admission. Premature cells of the lymphoid series were found in two of the cases, and in the case in which they were not found the course of the disease was rather acute and only four blood examinations were made. However, isolated cases of this condition have existed with only normal cells being found. Histologic examination of organs showed in all the cases a picture of classical leukemia as infiltration in spleen, glands, liver, and bone marrow. One of the cases showed a *Bacillus pyocyaneus* on blood culture before death. One case died of aplastic anemia, one died of secondary anemia due to the total feeding of breast milk (this case being over two years of age and having nothing but breast milk during its entire life), one case died of a thrombocytopenic purpura.

Dysentery.—Fourteen cases died of this condition, all showing ulcerative lesions in the lower intestine. In ten cases the causative organism was of the Flexner type, three cases *B. dysenteriæ* (Shiga), and in a single case the type remained undetermined after much cultural study.

Diabetes.—Three cases succumbed to diabetes, all dying as the result of coma. All cases showed lesions generally found in diabetes as decrease in the number of islets, increase in cells making up the islets, and moderate sclerosis of the interstitial framework of the gland.

Yellow Atrophy of the Liver.—Two cases of atrophy of the liver, both of the subacute variety, were encountered in this series of cases.

Cirrhosis.—One case each of atrophic cirrhosis and biliary cirrhosis were encountered.

Tetanus.—One case of tetanus followed a compound fracture of the right ulna, and the other a soft tissue injury of the right foot.

Ulceration of Esophagus.—Three cases showed as the only prominent lesion, a marked ulceration of the esophagus with much hemorrhage in the stomach.

Miscellaneous Causes.—This group, numbering thirteen cases, is composed of one case each of rabies, magacolon, epilepsy, typhoid fever, acute rickets, perinephritic abscess, retropharyngeal abscess, bronchiectasis, portal thrombosis, edema of larynx, necrotic stomatitis, and pachymeningitis cervicalis hypertrophica coexisting with a lateral sinus thrombosis.

Undetermined.—Nine cases in this series are not a high percentage of undetermined when compared with other like series, and especially when analyzing deaths in infants and children. In studying the protocol of these nine cases, one finds that in six the thymus exceeds the normal weight for the age. Also, in five of the above six hyperplasia of lymph glands, lymphoid follicles and Peyer's patches, subpericardial and subpleural hemorrhages are mentioned in each case, and with such findings one cannot but wonder what part a thymic taint may have contributed to these deaths.

SUMMARY

1. The anatomic findings of five hundred consecutive autopsies on children are tabulated and a brief discussion of each group of cases presented.

4614 Sunset Boulevard.

REFERENCE

1. Epstein, I. M.: Am. J. Dis. Child., 41:1363 (June), 1931.

DISCUSSION

William M. Happ, M. D. (523 West Sixth Street, Los Angeles).—Doctor Hyland's analysis of the causes of death in five hundred children over a three-year period affords many interesting points for study. One is struck by the fact that half of these patients died under the age of one year. This high infant mortality was due mainly to diarrhea, prematurity, congenital malformations and infections, chiefly pneumonia and otitis with its complications. This last-mentioned condition constitutes one of the chief menaces of the infant ward. In studying the group as a whole, it is noted that over half of the deaths were from infections of one kind or another, whereas heart and kidney disease account for only a small percentage. This is in striking contrast to a parallel analysis of deaths in an adult hospital.

The high incidence of deaths from tuberculosis should be especially noted, standing next to pneumonia as the chief cause of death. The importance of tuberculosis in childhood is thus very tragically emphasized. Most of these deaths are preventable by the early recognition of the disease in the parent or source of contact, early segregation of the child from the source of contact, and early recognition of the disease in the child. Following the general rule, most of the children dying from tuberculosis showed tuberculous meningitis at autopsy, forty-two of fifty-three cases. The low incidence of congenital syphilis (1.6 per cent) is encouraging, and speaks well for the increasing interest in the recognition and treatment of the disease in the mothers. Formerly the incidence was much higher. The relatively large number of deaths attributed to the thymus affords opportunity for discussion. Failure to discover a satisfactory explanation for death should not necessitate classification as "thymus death," even though the thymus gland and the lymph glands are enlarged. It is hoped that a more satisfactory understanding of these sudden deaths will be forthcoming in the future. In the meanwhile, it is necessary to continue using the present classification, unsatisfactory as it is. Finally, it should be noted that three of four cases of leukemia were of the aleukemic or leukopenic type, which seems to be the rule in childhood.

⁂

A. G. Foord, M. D. (Pasadena Hospital, Pasadena). In reviewing the summary presented today, the frankness of Doctor Hyland is brought out by the fact that he admits that there are nine out of the five hundred cases in which he was unable to make a diagnosis. This is the usual experience of men handling material from a hospital such as his, but some men do not care to admit that they do not know the reason for death in some patients.

I agree with Doctor Happ that the diagnosis of status lymphaticus is one that should be used in the rarest of instances, particularly when cognizance is taken of the fact that cases of sudden death, either in adults or children, are very prone to show prominent lymphoid tissue, whereas those sick only a few days or longer show much less prominence of the lymphatic apparatus. This point was brought out strongly by the Germans in their autopsies on young soldiers in the recent war, and has commonly been mentioned in cases of suicide.

The finding that half of the cases of meningitis were due to tuberculosis should make us all think of a tuberculous origin of cases of meningitis in children, particularly those in hospitals where there is a large Mexican or negro population. At the same time, seven out of eighty-two cases of meningitis due to influenza bacillus is a percentage somewhat higher than usually found.

Of particular interest are the types of organisms found in cases of mastoiditis. In twenty-seven patients, no pneumococcus was found. In our Pasadena experience in the last few years, pneumococcus has been found frequently, particularly pneumococcus type three, and the hemolytic streptococcus beta, much more commonly than the green-producing alpha type.

The low incidence of nephritis—only twelve cases among five hundred patients—is rather striking, but the figures gibe with experience in other hospitals, where teaching material on nephritis is often obtained with great difficulty.

Doctor Hyland should be congratulated on the work of his laboratory in uncovering bacillary dysentery, fourteen of such cases being included in his autopsy material. The policy of his laboratory of routinely culturing stools of babes and children with a diarrhea is to be recommended.

His figures as to the cases of death are particularly valuable, since he has reached the almost unheard of record of 96 per cent of autopsies on those dying in the Children's Hospital in Los Angeles. Certainly, his record is one that all pathologists should try to equal.

⁂

Doctor Hyland (Closing).—I wish to thank Doctors Happ and Foord for discussion of this paper. It was anticipated that the cases listed as "status lymphaticus" would be referred to in this discussion. I am aware that patients dying suddenly show a more prominent lymphoid apparatus than patients sick for some days or weeks; however, one not infrequently encounters a case in which this is not true.

I made an attempt in this series to keep as low as possible the incidence of this condition, and found it more of a problem than if the series was composed of a like number of adults. As stated in the analysis, no cases were labeled "Status Lymphaticus" that did not present the classical accepted picture of this condition; however, I am in complete accord with both of the discussers as to the lack of understanding this term conveys. I am also aware of the absence of the pneumococcus in our cases of mastoiditis in this series. In some of our recovered patients, this organism was present, but it was present very infrequently, which is not in agreement with Doctor Foord's experience in Pasadena. We have found the culturing of material from the intestinal tract and from the scraped mucosa at autopsy a valuable procedure, and it is done on all cases showing the least suggestion of an inflammatory lesion. Many cases of bacillary dysentery have been discovered since we have followed this procedure.

PORRO CESAREAN SECTION*

By Edmond M. Lazard, M. D.
Los Angeles

By the term "Porro cesarean section," hysterectomy following delivery of the baby by abdominal section is generally understood.

In 1876, the procedure was advocated by Porro in order to reduce the prohibitive mortality from puerperal infection following section which prevailed at the time. Then section was practiced as a last resort; the principles of asepsis were unknown, and suture of the uterus was not done. The wonder is, not that there was a high mortality, but that there were any recoveries following such a procedure.

The classical technique of the Porro operation was to eventrate the unopened uterus (the incision in the uterus being made extra-abdominally) and, after removal of the uterine contents, a rubber tourniquet was placed around the lower uterine segment to control hemorrhage; the cervix was transfixed with knitting needles which fixed the stump in the lower angle of the abdominal wound, and the uterus was amputated. Thus the risk of infection of the peritoneal cavity from spill of the infected uterine contents was largely obviated, and the danger from hemorrhage was overcome.

There was an immediate improvement in the results.

With the development of asepsis and improvement in surgical technique, the classical Porro operation has been almost entirely replaced with a typical supravaginal amputation of the uterus, with suture and peritonization of the stump. This is what is usually meant by Porro section today.

INDICATIONS

While the neglected or maltreated case, with possible or actual infection present, still is the principal reason for the Porro procedure, yet the modern indications have been broadened to include fibroids; abruptio placentae with Convellaire uterus and elective for purposes of sterilization.

As a method of sterilization, the Porro procedure has the following advantages over the less radical methods of tubal sterilization. First, may be mentioned that there is far less danger of infection than in the tubal sterilizations. In the latter method, after taking every precaution to protect the general peritoneal cavity during the sectioning, two new wounds are made in the cornuae of the uterus, necessitating invasion of the general peritoneal cavity after having invaded the potentially infected uterine cavity; thus largely losing the advantage of the care used to protect the peritoneal cavity during the sectioning. I have knowledge of three fatal cases resulting from tubal sterilizations, following section; and one, which came to autopsy, was performed by a most competent and skillful surgeon. At autopsy, a localized abscess at the site of the tubal resection, with intestinal adhesions to the abscess and obstruction of the bowels with generalized peritonitis, were found. A second patient, seen in consultation one week after an elective section and sterilization, was in extremis from a septic peritonitis and died within two hours of the time she was seen. With the Porro procedure, the danger of infection is reduced to a minimum, and there is this second advantage, its absolute assurance of effecting sterilization. There have been many pregnancies after attempt at sterilization by the tubal operations. In the third place, the Porro procedure can be done in less time and with less shock to the patient than is the case with the tubal procedure. Fourth, it relieves the patient of a large involuting organ, which is of no further functional use and only potent for later trouble, such as fibroid or malignancy developing.

---

* Chairman's address, Obstetrics and Gynecology Section of the California Medical Association, at the sixty-second annual session, Del Monte, April 24-27, 1933.

The disadvantage of the premature onset of the menopause can be largely obviated by properly preparing the patient for its advent.

I have had the opportunity of reviewing the records of the Los Angeles General Hospital, the Hollywood, California, and the Cedars of Lebanon hospitals for the past five years, and have found therein instances of fifty-one Porro cesarean operations, among which were seventeen personal cases, several of the latter antedating the five-year period.

The indications for the procedure were: potential or actual infection, 9; fibroids, 20; abruptio placentae, 4; failure of uterus to contract satisfactorily after section, 2; elective for purposes of sterilization, 15; and one case of gangrene of the lower uterine segment complicating obstructed labor.

Of the cases in which this procedure was elected for purposes of sterilization, one patient was a grav. 1; both the patient and her husband were crippled as a result of infantile paralysis, and they both requested that sterilization be done. She had a generally contracted pelvis, and was given a test of labor before section was proceeded with.

Eleven of the patients who were sterilized by this method had had previous sections, and three were multiparae who had dystocia due to previous amputations of the cervix. There were no deaths in this group.

Of the twenty cases in the fibroid group all had multiple fibroids, and in two cases there were degenerating fibroids. All of these patients made good recoveries, the highest postoperative temperature being 102.4 on one occasion in one of the degenerating fibroid cases.

The abruptio placentae group of four cases furnishes one of the deaths of the series. This was a patient whose operation was delayed several hours after the condition was recognized, and who died of shock within an hour after the termination of the operation. The three cases of abruptio which recovered were all classed as bad operative risks, preoperatively; and all had comparatively smooth recoveries. The babies of these four mothers were dead when the patients came under observation.

The two cases in which Porro was done because of noncontractility of the uterus following section, made good recoveries.

The classical indication for the Porro procedure, viz., actual or highly probable infection, was given in nine cases; and this group furnishes two of the deaths. One of these fatalities was a patient who had had a previous classical section. She was first seen when she was in premature labor at seven and one-half months, with signs of a threatened uterine rupture, and she had a temperature of 101.2. She was immediately subjected to a Porro section, but death occurred forty-nine hours after operation. At autopsy, a gas bacillus infection with necrosis of the uterine stump was found. In this case, a marsupialization of the cervical stump similar to the manner described by Porro would probably have been more favorable than the modern procedure of peritonizing the stump and dropping it back in the pelvis.

The second patient of this infected group who died was a grav. 1, who was seen in consultation in a small maternity cottage after she had been in labor seventy-two hours; she had been examined vaginally twice under what was thought to be aseptic precautions. She was regarded as a potentially infected case, and for this reason a Porro was done. She died on the sixth postoperative day with evidences of septic peritonitis; an autopsy could not be obtained.

The patient who was sectioned for threatened uterine rupture was classed as an almost hopeless risk. She was found at operation to have a gangrene of the lower uterine segment with a necrotic longitudinal rupture of the uterus, and there was a massive retroperitoneal hemorrhage. A rapid supravaginal amputation of the uterus, with marsupialization of the stump in the lower angle of the wound, was done. The patient died within an hour after the operation was finished. This case has already been reported, and is to be published later.

MORBIDITY

The convalescence was unusually smooth in all of the cases which were done for sterilization with the exception of two cases—one patient who developed pyelitis, with a temperature of 104 on the eighth day, but recovered and was discharged on the fifteenth day, and another patient who had had a previous amputation of the cervix and who, after the Porro, developed an abscess of the abdominal wall and was not discharged from the hospital until the thirty-seventh postoperative day. This was the longest hospitalization of the entire number, all the others being discharged within from fourteen to twenty-one days.

The potentially or actually infected group naturally had the most stormy convalescence, their temperature ranging from 101 to 104; but with the exception of the two who died, all made good recoveries and were discharged within three weeks.

TECHNIQUE

As already noted, the present-day technique of the so-called Porro operation is very different from that advocated originally by Porro.

Where the indication is fibroids or elective for sterilization, either the low cervical section or the classical section followed by supravaginal amputation of the uterus with peritonization of the cervical stump, should be the procedure.

If the low cervical operation is done, the transverse incision of the cervix is of advantage, as half the amputation is done when the baby is delivered.

If the indication is actual infection, the uterus should be eventrated before opening, and every precaution taken to protect the abdominal cavity from infection by spill from the uterus. It is a question as to whether the Portes exteriorization is not preferable to the Porro in cases of frank infection, as there is a better chance of protecting the peritoneal cavity; and in case of a primigravidous woman the conservation of the uterus, with the possibility of a future pregnancy, is a great advantage.

CONCLUSIONS

1. Porro cesarean section for fibroids, or elective for purposes of sterilization, should have no more mortality than is incident to any laparotomy; and the convalescence is as a rule uneventful.

2. Where the operation is done for fibroids, abruptio placentae or elective for sterilization, either a classical operation or a low cervical section with a transverse incision of the cervix, followed by supravaginal amputation of the uterus with peritonization of the cervical stump, should be the procedure of choice.

3. If the reason for the operation is a frank infection, every precaution should be taken to protect the peritoneal cavity from infection, by eventrating the unopened uterus and doing the work extra-abdominally. It is a question whether the Portes temporary exteriorization operation would not give better results in the frankly infected case and have, at the same time, the advantage of preserving the uterus.

4. In a series of fifty-one Porro operations, here reported, there were four deaths, 7.8 per cent; two of the deaths being from the group of nine cases done because of infection, 22 per cent; one death in the four cases of abruptio, 25 per cent; and one death from gangrene of the lower uterine segment with massive retroperitoneal hemorrhage present before operation.

In twenty cases done for fibroids, fifteen for sterilization, and two because of failure of uterus to contract after section, there were no deaths.

1930 Wilshire Boulevard.

POSTMENOPAUSAL HEMORRHAGE *

By Margaret Schulze, M. D.
San Francisco

Discussion *by R. Glenn Craig, M. D., San Francisco; John A. Sperry, M. D., San Francisco; H. N. Shaw, M. D., Los Angeles.*

Hemorrhage first appearing after the cessation of menstrual life is such an abnormal manifestation that one should expect that it would occasion immediate anxiety on the part of the woman and receive immediate investigation from her physician. Yet it is astonishing to see how many women ignore this symptom (attributing it to a return of their youth) and appalling to see how frequently even well-trained physicians treat it palliatively without adequate investigation. All too often ergot is prescribed to control bleeding without even an examination, or a patient is given local treatments to her cervix while her fundal carcinoma grows beyond the limits of operability. One patient in this series had been treated twice weekly for a period of fourteen months without noticeable benefit. Becoming dissatisfied, she went to a second physician, who applied medication to her cervix for another six months before she finally appeared for investigation at the University of California Woman's Clinic.

Yet the number of such cases which do appear is constantly increasing. They formed 2.2 per cent of the 3,310 admissions in the first ten years on the gynecologic service, and 3.2 per cent of 7,360 admissions in the next nine and one-half years. Not infrequently at the present time a patient enters within a day or two after noticing the first slight spotting, and although these early admissions increase very greatly the hopefulness of accomplishing something for these patients, they also increase very greatly the difficulties of diagnosis in certain cases.

In many cases, unfortunately, the diagnosis is only too obvious, for malignancy of the genital tract, and particularly of the cervix and the fundus uteri, remains the most important cause of postmenopausal hemorrhage, and the one which must always be eliminated before any type of conservative treatment is justifiable. In other cases even the most thorough investigation, including examination under anesthesia and biopsy or diagnostic curettage may leave the diagnosis obscure. Such cases must of course remain under the closest observation until further developments establish diagnosis or cure.

ANALYSIS OF THE CLINICAL MATERIAL USED IN THIS STUDY

It was in an effort to throw additional light on this subject that the 315 cases occurring in 10,670 admissions to the gynecologic service were studied. It was found that in 215 cases, or more than two-thirds of the total number, the bleeding was due to a malignant tumor of the genital tract. Of these the very great majority were uterine tumors. One hundred and fifty-three patients had carcinoma of the cervix; in fourteen of these the carcinoma had developed in the cervical stump remaining after supravaginal hysterectomy. The histologic diagnosis of adenocarcinoma of the stump appearing rather soon after supravaginal hysterectomy elsewhere, aroused the suspicion in three of these cases that the tumor might have arisen from a fundal adenocarcinoma overlooked at the primary operation. Fifty-one women had fundal adenocarcinoma, two had sarcoma, and one a chorioepithelioma. Three women had vaginal carcinoma, two carcinomas of the urethra, and one had a carcinoma of the vulva. Among the ovarian tumors associated with postmenopausal hemorrhage were two ovarian cancers, as well as two of the semimalignant granulosa cell tumors.

---

* From the department of obstetrics and gynecology, University of California Medical School.

Benign tumors causing bleeding are relatively infrequent in older women. Myomata are so definitely dependent upon ovarian function that they usually atrophy with the menopause or demand treatment before the menopause appears. There were only five uterine myomata, of which two were submucous, and two adenomyomata in the series.

Mucous polypi, both of the fundus and of the cervix, are, however, comparatively common, and are one of the obvious causes of hemorrhage, although occasionally they may be present for many years without giving rise to symptoms. There were twelve endometrial polypi and twenty-four of the cervix in this series. Malignant degeneration of both types undoubtedly occurs, although how frequently is difficult to estimate. At least one of the cervical carcinomata definitely originated at the base of a cervical polyp and there were very likely others. In certain of the fundal adenocarcinomata also the long duration of abnormal bleeding in the presence of a comparatively early growth suggested the earlier presence of benign growths or hyperplastic changes in the endometrium.

Bleeding, due to trauma to a uterus which is prolapsed, of which there were sixteen cases in this series, or to irritation from an ill-fitting pessary, of which there were two, is of importance only because the resultant ulcer must be differentiated from a malignant one. This is usually easy because of the very rapid response to appropriate treatment.

Slight bleeding associated with a senile vaginitis is easy to recognize, but occasionally, as in two cases in this series, it becomes necessary to eliminate other more serious causes. Severe trichomonas vaginitis may give rise to slight bleeding, but is so easy to diagnosticate that it becomes a problem only to the untrained.

Urethral caruncle caused hemorrhage that was mistaken for vaginal in two cases.

In thirteen cases there was a very severe endocervicitis with a cervix that bled easily and that brought up the question of differential diagnosis from a very early carcinoma. Biopsy showed only an inflammatory process, and the symptoms cleared up with cervical resection or cauterization.

Inflammatory lesions of the uterine fundus accounted for six further cases. In five cases there was a definite pyometra without evidence of carcinoma. Benthin's explanation of the occurrence of such cases may be the true one. He feels that there may be a stenosis of the cervical canal as a result of senile atrophy, resulting in an interference with drainage from the uterine cavity. Necrosis, due to poor nutrition of the senile mucosa, favors infection, while the poor development of the cervical mucous plug allows easier ascent of organisms. In one case, aside from those with definite pyometra, pathologic examination showed chronic inflammation in an atrophic endometrium, and it seems probable that a similar process may account for the bleeding in a considerable proportion of the seventeen cases in which even after careful investigation a definite diagnosis could not be established. These cases all showed no lesion, and curettage yielded either no tissue at all, or insufficient tissue for a diagnosis. Such cases are unsatisfactory, as they always leave one with the suspicion that a very early fundal carcinoma may have been missed by the curette. They should always be carefully followed, and if the symptoms are not promptly alleviated they should be reinvestigated. Fortunately the greater number clear up promptly simply with dilatation and curettage. Unless there is an actual pyometra, these patients usually have a small atrophic uterus, and the presence of definite uterine enlargement should always arouse the suspicion that there is more than an inflammatory lesion. In one such case, considered clinically a fundal adenocarcinoma and treated by radium only, because of her advanced age of seventy, insufficient tissue for diagnosis was obtained at the time of the first two treatments, yet the third specimen showed adenocarcinoma.

The most interesting cases in the entire series are those in which the bleeding is apparently associated with disturbances in ovarian function, either with or without actual tumor formation. These cases show a characteristic endometrial hyperplasia, with increase in interglandular stroma, and marked irregularity in size and shape of the glands—such as is seen in cases of so-called idiopathic menopausal hemorrhage. The ovaries in the cases of menopausal hemorrhage show numerous follicular cysts and an entire absence of lutein tissue, and it is believed that the excessive hemorrhage is due to an increase in follicular hormone and the absence of the lutein hormone. Where the postmenopausal hemorrhage is periodic, and appears relatively soon after the onset of the menopause, as in two cases in this series, we may assume, as does Robert Meyer, that it probably means a temporary reawakening of ovarian activity associated with the endocrine imbalance of the menopause. This probably explains also the not very infrequent history obtained from older patients of several periods of bleeding at definite intervals, often several years after the menopause, which later ceased without treatment. Such cases, although most interesting, are not included in this series, since there is no way of accurate determination of their etiology.

Among the ovarian tumors associated with postmenopausal hemorrhage were two pseudomucinous cystadenomata, one papillary cystadenoma, one cyst with twisted pedicle with such extensive necroses and hemorrhagic infiltration of the tissues that its nature could not be determined, two ovarian carcinomata and two of the very interesting granulosa cell tumors which have been described so exhaustively by Robert Meyer.

These tumors are most interesting because there is definite evidence that the tumor cells exert a hormonal influence, and their recognition is important because they are relatively benign and early removal is usually followed by cure. These tumors are usually quite small, are well encapsulated, and are characterized microscopically by a resemblance of the tumor cells to the granulosa cells of the normal ovary and a tendency in the folliculoid type to form structures resembling Graafian follicles and follicular cysts. The cylindroid type shows the same type of cell, but here the cell masses are broken up into strands and figures to form bizarre patterns by the ingrowth of corrective tissue stroma.

Our series includes two very typical though quite early cases, and it is most interesting to note that in both of these women the removal of the tumors, which were little larger than a normal ovary, was followed by severe vasomotor symptoms, although each had passed through the actual menopause some years before without marked disturbances.

Two other cases are of considerable interest in this connection—one a fairly large well-encapsulated ovarian tumor in a woman of forty-six who had her menopause at thirty-eight. She has been diagnosed as medullary carcinoma, but the tumor cells bear a considerable resemblance to granulose cells although the arrangement is not characteristic. The endometrium shows the typical hyperplasia picture.

Another is a woman of sixty, who had her last menstrual period at forty-five, but was irregular for ten years previous with a very profuse flow. She was well till one month before admission, when she began to have an extremely copious vaginal hemorrhage which lasted two weeks. She was free one week and then started bleeding again. Pelvic examination was negative, but the endometrium was definitely hyperplastic. Hemorrhage ceased, following curettage and a large dose of radium, but the case is too recent to know what the final outcome will be. She is such an extremely poor surgical risk that an exploration seems inadvisable. The clinical picture in both these cases resembles very much that of a granulose-cell tumor, and it will be interesting to follow them for a number of years to determine the final outcome.

CONCLUSIONS

Vaginal bleeding occurring after the menopause is a symptom of the utmost gravity and one that demands immediate investigation. In over two-thirds of all such cases appearing for diagnosis on the gynecologic service of the University of California the cause was found to be a malignant tumor of some portion of the genital tract. Almost half (49 per cent) of the total number had carcinoma of the cervix uteri. The benign causes were various, but could usually be readily determined by careful examination, including, if necessary, diagnostic curettage. In rare cases no cause could be established for the bleeding. Such women should always be kept under the closest possible observation, and, if necessary, be reinvestigated, but fortunately many of them are relieved merely by curettage.

University of California Hospital.

DISCUSSION

R. Glenn Craig, M. D. (490 Post Street, San Francisco).—I am sure we all feel indebted to Doctor Schulze for her presentation of this subject. The large number of histories reviewed adds weight to her words. It would hardly seem necessary to reiterate the dictum which has been taught in medical schools for so long, that bleeding after menopause is "cancer" until proved otherwise. Her statement that more than two-thirds of the patients with this complaint had a malignancy justifies the advisability of this viewpoint as a working rule, especially when we hear that one patient was treated for twenty months before the real condition was recognized and treated properly.

Again, it hardly seems necessary to restate that a diagnosis should be made before treatment is begun, but Doctor Schulze's statement that the percentage of such patients is increasing should warn us that we must continue to be alert. The ready availability of pathological laboratories should decrease the instances where early carcinoma of the cervix is mistaken for endocervicitis. Despite the objection that a diagnostic biopsy of the cervix should only be done when it can be promptly followed by proper treatment, it is preferable to incorrect treatment. I believe a biopsy should be done in all doubtful cases.

Benign and malignant neoplasm of the vulva, urethra, and vagina are usually easily recognized, as is a cervical polyp. But bleeding from the cervical canal may result from a pyometra, as well as an adenocarcinoma of the endometrium, and the differential diagnosis may not be easy. While we advise an early diagnosis, we also advise conservative surgery, especially in older persons. In the absence of any definite evidence of an existing adenocarcinoma, it is much less dangerous to the patient to advise a diagnostic curettement, which may cure the patient with pyometra, than to "boldly" undertake an extensive operation for an "adenocarcinoma" which does not exist. Doctor Schulze has pointed out the difficulty of the diagnosis and the necessity of a "follow-up."

Perhaps the most interesting group of the patients are those with ovarian neoplasms. I should like to repeat briefly the history of two patients whom I have seen.

One, a woman of fifty-eight, had had complete cessation of vaginal bleeding at fifty-one. Five months before presenting herself she began to have a regular menstrual flow. In addition, she felt younger and more vigorous, and was elated at her "regained youth." She had a carcinoma of the ovary. The second, a woman, age fifty-seven, had had a complete cessation of menstruation five years previously, with a return of her menstrual flow for the preceding three months. She also had a "carcinoma" of the ovary. Probably one or both of these patients had one of those interesting tumors, a granulosa cell carcinoma, or the awakening of the ovarian function was due to stimulation from the ovarian neoplasm.

Ten years from now I hope Doctor Schulze will be able to report a decrease, rather than an increase, in the number of incorrect diagnosis, as a result of her paper.

⁂

John A. Sperry, M. D. (490 Post Street, San Francisco).—The matter of uterine bleeding in women nearing, during or past the menopause, is probably the most important of any gynecologic symptom. But strange to say, bleeding of this kind is often ignored by the patient, or what is worse, by the physician whom she consults. Also, as Doctor Schulze points out, many are tamponed or given ergot until the undiagnosed cancer is hopeless.

A more serious neglect, and one for which there is no excuse, is the treatment by radium or x-ray of a bleeding uterus before an accurate diagnosis is made. The radium dose and number of applications is, of course, dependent upon the existing pathology. As to whether x-ray should be used of course depends upon an accurate diagnosis. Still we all see patients so treated without diagnostic curettage having been done who were given the customary dose for what was thought to be a small myoma or polyp and later were found to have a hopeless and neglected cancer. The physician who treats a uterus with radium or x-ray should know exactly what he is treating, as it is certainly a very great responsibility.

I saw, not long ago, a doctor's wife who began to bleed one year after her menopause. Diagnosis was made of a moderate sized myoma, which was treated with radium. The bleeding stopped for six months. Later a large and hopeless ovarian cancer was removed. The bleeding in this case had been stimulated by the ovarian growth, as mentioned by Doctor Schulze; and in this case if an accurate diagnosis could have been made and operation immediately done, her chances certainly would have been much better.

Doctor Schulze has found that two-thirds of those women showing bleeding after the menopause had cancer of the genital tract. This being true, certainly a careful investigation should be made before any treatment is undertaken.

⁂

H. N. Shaw, M. D. (901-902 Pacific Mutual Building, Los Angeles).—I wish to emphasize the fact that, while diagnostic curettage is almost always indicated in these individuals, precautions must be observed. I shall cite two cases as examples.

Case 1.—M. R., age sixty-five, single, virgin. Complaint: slight vaginal bleeding for two weeks, thirteen years after menopause. On June 8, 1929, frozen section of curettings showed fundus carcinoma of "low malignancy" and panhysterectomy was performed at once. Five months later, on November 3, the patient had a vaginal hemorrhage. At examination that day, introduction of a speculum broke off a vascular tumor 3 by 1 by 1 centimeters at the upper angle of the vagina. Frozen section showed highly malignant tumor. There were two slightly smaller tumors in the upper vagina. These were given two applications of radium, and the patient had no recurrences.

Carcinoma rarely implants on mucous surfaces. We felt that the routine vaginal scrubbing with iodin and alcohol had removed the surface epithelium and laid open raw surfaces on which the carcinomatous fragments could implant. To avoid this danger in elderly patients with thin mucosa, we advise great care in the vaginal cleaning.

Case 2.—E. B., age fifty-seven, single, virgin. Complaint: Painless bleeding for two weeks nine years after menopause.

Curettage, August 30, 1928. Frozen section unsatisfactory, but rush paraffin section twenty-four hours later showed fundus carcinoma. On September 1, panhysterectomy showed a papillary carcinoma in upper angle of fundus two centimeters in diameter on a small pedicle.

This patient came into the hospital within less than three years, with signs of intestinal obstruction, and died on July 6, 1931. Autopsy showed carcinoma scattered over peritoneum and intestinal walls, causing obstruction, but no tumors in the broad ligaments, the usual site of recurrence.

An early carcinoma of the fundus in an elderly woman is usually cured by hysterectomy. We felt that the recurrences were due to material squeezed out through the tubes during the hysterectomy, rather than metastatic invasion by the lymphatics.

In any case of hysterectomy where carcinoma of the fundus is expected, the tubes should be ligated before exerting pressure on the fundus. This is especially necessary where a preliminary curettage has been done.

Doctor Schulze (Closing).—A statistical study such as the one above submitted serves mainly to reëmphasize the importance of facts which are well known to us all. Since in two-thirds of all cases, including those with only the slightest spotting, postmenopausal bleeding is due to malignancy of the genital tract, it is not a symptom which can ever with safety be treated expectantly. As both Doctor Craig and Doctor Sperry have pointed out, the important thing is to establish a diagnosis. We may thus avoid, on the one hand, over-radical treatment in elderly patients who may be very poor operative risks, or, on the other hand, avoid palliative treatment with medication or inadequate radiation when we are dealing with cancer. The details of technique which Doctor Shaw has emphasized are most important, for without this great care to prevent dissemination at the time of operation, we may merely hasten the fatal termination rather than cure by our operative procedure.

CIRCULATION AND POSTURAL CHANGE*

ADJUSTMENTS IN HEALTH AND DISEASE

By David G. Ghrist, M. D.
Los Angeles

Discussion *by Burrell O. Raulston, M. D., Los Angeles; Audley O. Sanders, M. D., Palo Alto; Thomas G. Inman, M. D., San Francisco.*

ADJUSTMENT of the circulation to oppose the effect of gravity on assumption of the upright posture is largely dependent upon the phenomena of peripheral blood pressure. The three main factors contributing to a given blood pressure level are: (1) heart output; (2) blood volume; and (3) peripheral resistance. Defect in any of these factors may result in inefficient postural adjustment by the circulation.

The heart output, according to Grollman,[1] does not vary in normal subjects on change from recumbency to standing. The syncope associated with Stokes-Adams syndrome, however, represents failure of postural adjustment as a result of cardiac inefficiency. The animal experiments of Piorry in 1826 are quoted by Hill [2] as proving the importance of an adequate blood volume in compensating the effect of gravity.

PHYSIOLOGIC ADJUSTMENT OF PERIPHERAL RESISTANCE TO POSTURAL CHANGE

Definite information regarding the physiologic adjustment of peripheral resistance to postural change dates from the experimental work of Hill,[2] and Hill and Barnard [3] in 1895 and 1897 respectively. From their experiments on animals, these investigators showed that compensatory constriction of the splanchnic arterioles successfully opposes the effect of gravity and prevents the development of cerebral anemia during the maintenance of the upright posture. Section of the splanchnic nerves, which abolished vasomotor tone in the splanchnic area, resulted in dilatation of the arterioles in this region. This caused little or no embarrassment to the circulation while the horizontal posture was maintained, on account of increased respiratory movements and abdominal muscle tone being capable of compensating for the arteriole dilatation. Assumption of the erect posture, however, resulted in shift of the blood mass to the splanchnic venules and veins. Even under these conditions, the experimental animals were nevertheless capable of maintaining a fractional amount of venous return to the heart by increased force of respiratory movements which resulted in considerable aspiration of blood from the splanchnic area of venous congestion. After section of the spinal cord at the level of the first dorsal vertebra, efferent impulses were cut off from the vasomotor and respiratory centers, and compensation for the effect of gravity failed. Under these latter conditions, however, external pressure and massage of the abdomen appeared capable of opposing collection of the blood mass in the splanchnic area. After vagus section, failure of the heart to decrease its rate on attaining the horizontal position proved the importance of vagus control of heart rate in postural adjustment.

---

* Read before the Anesthesiology Section of the California Medical Association at the sixty-first annual session, Pasadena, May 2-5, 1932.

PARALYSIS OF SPLANCHNIC VASOCONSTRICTORS

Moderate ether anesthesia was shown by Hill[2] not to interfere with circulatory compensation for the upright posture. The forcing of ether or chloroform anesthesia was found to damage the compensation for postural change for a considerable period of time after the anesthetics had been removed. A paralysis of the vasomotor center took place with the pushing of both ether and chloroform. The latter anesthetic, however, depressed the vasomotor center more quickly and, in addition, depressed the heart. Therefore that investigator warned that chloroform could kill a patient when the abdomen is lower than the heart. Hill's demonstration of increased respiratory movements being capable of compensating for lack of splanchnic vasomotor tone in the upright posture probably explains why spinal anesthesia, when confined in motor paralysis to a level below the innervation of the major respiratory muscles, interferes but little with circulatory efficiency.

Other causes for paralysis of the splanchnic vasoconstrictors were named by Hill as follows: (1) severe operative procedures; (2) excessive handling of the intestines; (3) spinal cord injuries; (4) asphyxia; and (5) poisons, such as curare. He further believed that reflex dilatation of the splanchnic arterioles characterizes ordinary emotional syncope in the human subject. Asthenic individuals were believed by him to be less capable of compensating for gravity and were more prone to syncopal attacks of the reflex type. In the treatment of this type of circulatory collapse, compression and elevation of the abdomen were recommended.

SHOCK

In correlating failure of splanchnic compensation for postural change with surgical and traumatic shock, it seems best to accept Cannon's[4] preference for classification of shock into primary and secondary types. Primary shock is that type which arises almost immediately after an injury, or suddenly during the course of an operation, and is apparently induced by reflex inhibition of the vasomotor center. The dilatation of the splanchnic arterioles and consequent venous engorgement which occurs in this type of shock probably represents the same phenomenon as obtains during failure of vasomotor tone to compensate for postural change. Elevation of the abdomen, with lowering of the head, has proved alleviative in the treatment of primary shock, emotional syncope and symptoms arising from failure to compensate for the effect which gravity exerts upon the circulation. These phenomena are quite different from secondary or delayed traumatic shock which Cannon conceives as being characterized by arteriole constriction, capillary stasis, and diffusion of plasma into the tissue spaces with resultant decrease of the total blood volume. Apparently the vasomotor tone is effectively maintained until a very late stage of secondary shock is reached; hence lowering of the head is incapable of alleviating this latter form of collapse.

EFFECTS OF POSTURAL CHANGE IN HUMAN SUBJECTS

In human subjects, the normal response of pulse and blood pressure to postural change has been carefully studied by various investigators.[5, 6, 7, 8] It is now quite generally accepted that a change from lying to standing posture in human subjects normally entails an average *rise* of ten to twelve beats in pulse rate, an average *rise* of from eight to ten millimeters diastolic blood pressure, and a very slight *fall* (0 to 4 millimeters) of the systolic blood pressure at the brachial artery region. This results in a decrease of approximately eight to twelve millimeters of pulse pressure on the assumption of the erect posture. Only very slight differences in the pulse and blood pressure reactions occur whether the postural change is actively or passively carried out. Raising of the head 45 degrees above horizontal was reported by Ellis[6] to incite approximately the same compensatory response as when the total change from horizontal to upright took place. Failure of the diastolic blood pressure to rise on standing has been interpreted by Sewell,[9] Mortenson[8] and others as indicating a lack of vasomotor tone in the human subject.

Turner,[10, 11, 12] in her study of the reactions of normal young women to prolonged standing, found that those individuals exhibiting a high reclining heart rate, or marked decrease of pulse pressure in the erect posture, were prone to develop symptoms of dizziness on prolonged standing. Her data suggests that better postural adjustment occurs in those subjects who do not give a previous history of faintness or dizziness on standing. She believes that abnormal rise of diastolic blood pressure on postural change indicates insufficiency of heart output. This investigator also shows that stagnation of blood in the abdominal area may occur during prolonged standing, and that bandage or support to the abdomen relieves the resultant symptoms. The improvement in postural adjustment after eating, reported by her, indicates the rôle which increased intestinal peristalsis may play in augmenting venous return.

Since 1925, when Bradbury and Eggleston[13] reported three cases exhibiting marked fall of blood pressure on assumption of the upright posture, a total of eleven cases of true postural hypotension, without associated Addison's disease, has been reported in the literature. Review of these case reports reveals a high incidence of commonly associated phenomena such as syncopal attacks on change from lying to standing, slow, unchanging pulse rate on postural change, anhidrosis, slight decrease in the basal metabolic rate and loss of sex urge. Several of the older cases exhibited marked general arteriosclerosis, which may have been important in consideration of their etiology. Since Ghrist and Brown[14] report successful alleviation of symptoms in one case of true postural hypotension by repeated small doses of ephedrin, this drug deserves a trial in cases so diagnosed. Those cases obtaining relief of postural symptoms by use of ephedrin probably present an atony of the myoneural junctures of the arterioles as their primary defect. Other cases reveal more probable evidence of defect in the nervous system of vasomotor control. In this disease, failure of abdominal support to give symptomatic relief in practically all attempts at treatment by this measure, presents evidence that regions other than the splanchnic area may participate in the phenomenon of circulatory stasis on assumption of the upright posture.

In 1927, Ghrist and Rowntree[15] reported one case of Addison's disease which exhibited an associated postural hypotension. Since then Ghrist[16] has reported the postural reactions revealed by a series of ten cases of Addison's disease. In three (30 per cent) of these cases there occurred such marked fall of blood pressure and rise in pulse rate as to become incapable of determination, and symptoms of impending syncope were experienced as the upright posture was reached.* One other case of postural hypotension associated with Addison's disease was reported by Duggan and Barr[17] in 1931. The marked rise in pulse, associated with severe fall of blood pressure, differentiated these Addison's disease reactions to postural change from those of true postural hypotension cases similarly studied. Failure of epinephrin or ephedrin to relieve the postural collapse in the Addison's disease cases indicated that factors such as small heart size, general muscular weakness,† lack of circulating hormones from the suprarenal glands, etc., probably combine to prevent an efficient adjustment of the circulation to the upright posture. Marked fall of blood pressure on postural change was exhibited by no other individuals or groups of patients so studied.

Postural tests carried out by Ghrist[16] on other groups of patients present evidence that neither essential hypotension nor undernourishment preclude normal response of pulse and blood pressure to postural change. Also, subnormal rise of diastolic blood pressure (without resultant symptoms) on passive change from horizontal to erect was exhibited by groups of patients with scleroderma, chronic infectious arthritis, and benign (essential) hypertension. The group of ten cases of malignant (essential) hypertension showed marked tendency to diastolic fixation in all postures. Patients with complaints of general weakness were shown capable of initiating normal postural response, but often yielded evidence of fatigue in their mechanism after several minutes' normal maintenance of this function. Symptoms on postural change were seldom produced unless a previous history of this association could be elicited from the patient. Postural studies before and after operation indicated that neither lumbar, nor cervico-thoracic sympathetic ganglionectomy and trunk resection appreciably altered the reaction of diastolic blood pressure to postural change. This latter observation strengthens the contention that the splanchnic area is of major importance in adjustment of the circulation to oppose the effect of gravity.

SUMMARY

The importance of adequate heart output, adequate blood volume and efficient adjustment of peripheral resistance in opposing the effect of gravity on the circulation is noted. Causes for failure of peripheral resistance to compensate for the upright posture are reviewed and the resultant pathologic physiology is discussed. The circulatory reactions in primary shock, emotional syncope and postural hypotension are compared. The danger accruing to the mechanism for postural adjustment from influences such as spinal cord injuries, too light anesthesia, chloroform, the forcing of ether anesthesia, high spinal anesthesia, asphyxia, excessive handling of the intestines, and severe operative procedures is reiterated. The differentiation between true postural hypotension and postural hypotension associated with Addison's disease by the response in pulse rate, is again presented, and the comparative rarity of both conditions in the literature is revealed. The trial of ephedrin in treatment of true postural hypotension is recommended. In searching for subjects who may exhibit defective postural adjustment, individuals exhibiting general weakness as a complaint and postural symptoms in their history are designated as the best potential group for study. The dominant rôle of the splanchnic area in opposing the effect of gravity appears, from the present review, to be strengthened.

1930 Wilshire Boulevard.

REFERENCES

1. Grollman, A.: The Effect of Variation in Posture on the Output of the Human Heart. Am. J. Physiol., 86:285, 1928.

2. Hill, Leonard: The Influence of the Force of Gravity on the Circulation of the Blood. J. Physiol., 18:15-54, 1895.

3. Hill, L., and Barnard, H.: Gravity and the Circulation. J. Physiol., 21:323-52, 1897.

---

* Two additional cases of this series experienced definite symptoms of faintness or dizziness as the upright posture was reached.

† This factor probably contributes to inefficient respiratory and abdominal compensation for stasis of the blood mass in the splanchnic and dependent areas.

4. Cannon, W. B.: Traumatic Shock. D. Appleton and Co., N. Y. and London, 1923.

5. Erlanger, Joseph, and Hooker, Donald R.: Study of Blood Pressure and Pulse Pressure in Man. Johns Hopkins Hosp., Report, XII, 145, 1904.

6. Ellis, Max M.: Pulse Rate and Blood Pressure Responses of Men to Passive Postural Changes. Am. J. M. Sc., 161:568-579, 1921.

7. Schneider, E. C., and Truesdale, D.: A Statistical Study of Pulse Rate and Arterial Blood Pressures in Recumbency, Standing and After a Standard Exercise. Am. J. Physiol., 61:429, 1922.

8. Mortenson, M. A.: Blood Pressure Reactions to Passive Postural Changes: An Index to Myocardial Efficiency. Am. J. M. Sc., 165:667, 1923.

9. Sewell, H.: On the Clinical Significance of Postural Changes in the Blood Pressures and the Secondary Waves of Arterial Blood Pressure. Am. J. M. Sc., 158:786, 1919.

10. Turner, A. H.: Adjustment of Heart Rate and Arterial Blood Pressure in Healthy Young Women During Prolonged Standing. Am. J. Physiol., 81:197, 1927.

11. Turner, A. H.: Personal Character of Prolonged Standing Circulatory Reaction and Factors Influencing It. Am. J. Physiol., 87:667-680 (Jan.), 1929.

12. Turner, A. H., Newton, M. I., and Haynes, F. W.: Circulatory Reaction to Gravity in Healthy Young Women; Evidence Regarding Its Precision and Its Stability. Am. J. Physiol., 94:507-520 (Sept.), 1930.

13. Bradbury, S., and Eggleston, C.: Postural Hypotension; a Report of Three Cases. Am. Heart J., 1:73, 1925-1926.

14. Ghrist, David G., and Brown, George E.: Postural Hypotension With Syncope: Its Successful Treatment With Ephedrin. Am. J. M. Sc., 175:336 (March), 1928.

15. Ghrist, David G., and Rowntree, Leonard G.: Addison's Disease Without Pigmentation: Report of a Case. Endocrinology, XI, 6:580-592 (Nov.-Dec.), 1927.

16. Ghrist, David G.: Variations in Pulse and Blood Pressure with Interrupted Change of Posture. Ann. Int. Med., 4:945-958 (Feb.), 1931.

17. Duggan, L. B., and Barr, D. P.: Postural Hypotension Occurring in a Negro with Addison's Disease. Endocrinology, 15:531 (Nov.-Dec.), 1931.

DISCUSSION

Burrell O. Raulston, M. D. (University of Southern California, Los Angeles).—Doctor Ghrist emphasizes here a factor in symptomatology, if not in actual failure of health, that is frequently not recognized. When vasomotor instability is present to a degree sufficient to produce temporary symptoms of circulatory failure to the brain the condition may be recognized and dealt with according to the descriptions given in this paper. There must be a considerable number of patients who complain of lack of strength and endurance, lack of initiative, and lack of well-being, in whom a definite diagnosis is difficult and unsatisfactory, who suffer from mild degrees of the condition described here. A more thorough study of such patients in keeping with the ideas presented in this paper should be of value not only for the sake of a more accurate diagnosis but as a valuable aid in prescribing treatment. Undoubtedly many of the general measures used in treatment of patients who are diagnosed as having "general debility," "constitutional inferiority," and such indefinite conditions improve only because of some plan of management that corrects to some degree this condition of the vasomotor apparatus. If such patients could have the advantage of a more accurate diagnosis they might frequently be spared a considerable amount of drug therapy that is useless and often expensive.

⁂

Audley O. Sanders, M. D. (U. S. V. A., Diagnostic Center, Palo Alto).—Doctor Ghrist has rendered a definite service by repeatedly calling our attention to the clinical syndromes of arterial hypotension and by insisting that these syndromes often represent specific disease entities. In the past, far too little recognition has been given to these syndromes. In fact, they have seldom been considered as presenting separate clinical pictures in themselves. Rather, they have been merged into the confused and vague pictures of "neurasthenia," "effort syndrome," "visceroptosis," etc. It matters little what term may be used to identify the group of signs and symptoms characteristic of a disease entity; but it is exceedingly important that such a syndrome be generally recognized as evidence of some definite disease condition. Then, and then only, can advances be made in identifying the underlying pathology and in giving relief or help to the patient.

⁂

Thomas G. Inman, M. D. (2000 Van Ness Avenue, San Francisco).—Like many other problems in physiology, the causes which determine postural shifting of the blood quantum, or better, the reason for its not shifting equally in all individuals subjected to similar changes in body posture, may depend upon a number of influences acting together.

In a complex organism like the human body, it is impossible to estimate exactly the effect of a single factor acting upon a mobile structure such as is the blood. There are more than twenty variable factors constantly influencing the movement of this semifluid mass. It is possible only to give an approximate estimate of the effect of any one of them at a given time.

The fact that in certain otherwise healthy individuals untoward symptoms follow upon a change from the lying to the standing position, and that notable changes in blood pressure can be detected may, in the present state of our knowledge, be attributed to the effect of gravitation acting in an individual imperfectly equipped to maintain a stable equilibrium under varying changes in body position. The defect may lie in one instance in the vasomotor system, in another in atonic musculative, imperfect respiratory excursions, cardiac weakness, overactive psycho-visceral reflexes, etc. Perhaps it would be safer to look upon the postural blood pressure change as indicating a necessity for further search along the lines suggested by Doctor Ghrist.

Repeated observations lead to the belief that there is a certain type of individual in whom there exists a tardy adaptability to changes from the horizontal to the vertical position, and blood pressure determinations confirm the opinion that symptoms, when present, may be due to a defect in circulatory compensation. The long body, narrow thorax, small, central heart and limited diaphragm excursions point to the susceptible individual. In so far as the effect of gravity is concerned, some observers have suggested that the phenomenon may represent a lack of evolutionary adaptation to the vertical position; but opposed to this view is the fact that in a civilization in which many centuries of evolution are represented, blood ptosis, so called, is observed more frequently in those coming from the upper levels than in the more primitive groups. It may, indeed, be one of the penalties of civilization.

In the search for a permanently effectual therapy for these cases of constitutional postural hypotension too much stress may be placed upon medication directed toward increasing the activity of the propelling mechanism, forgetting that it is the return of the blood to the right heart that is the important matter. Thus, attempts to raise the blood pressure by stimulation of the heart only call for an expenditure of energy on the part of the circulatory system without obtaining a corresponding increase in the efficiency of the structures actually at fault.

Symptoms arising, directly or indirectly, from imperfect adjustment of the circulation of the lower half of the body are more common than is generally recognized and the timely studies of Doctor Ghrist will do much toward increasing our knowledge of the subject.

COMPENSABLE INDUSTRIAL DERMATOSES *

By Moses Scholtz, M. D.
Los Angeles

Discussion *by H. Sutherland Campbell, M. D., Los Angeles; Stuart C. Way, M. D., San Francisco; Stanley O. Chambers, M. D., Los Angeles.*

With the growth of modern industry the clinical and medico-legal significance of industrial dermatoses grows apace. The introduction of new industrial materials and chemicals supplies an ever new source of occupational skin disability.

Industrial dermatoses, or, as they have been called, ergodermatoses, steadily grow in incidence and amount of compensational claims. The dermatologist is quite often called upon to pass an opinion and render a judgment as to whether a certain dermatosis is of occupational origin and compensable.

Yet there is much uncertainty and vagueness in the definition of the basic concepts and principles guiding the clinical identification of such cases and the evaluation of their compensability. It seems, therefore, timely and of clinical interest to attempt a review and elucidation of this subject.

THEORETICAL CONCEPTS VERSUS PRACTICAL INFERENCES

The analysis of the theoretical premises and concepts advanced by authorities and students of the subject leaves one with the impression of its immense complexity. The theories and hypotheses of allergy and hypersensitization invoked by modern research to explain the pathogenesis of ergodermatoses do not offer any practical help of guiding principles in the problem of evaluation of the compensability of ergodermatoses.

The clinician cannot help feeling that the whole subject of allergy, in spite of the tremendous amount of experimental research and occasional spectacular diagnostic and therapeutic results, is still in its infancy.

Its basic concepts seem to be as yet in a fluid state, and are not clearly cut and differentiated one from another. Thus Doerr, one of the leading theoretical allergists, says (quoted by Coca)[1]: "For the terms allergy, anaphylaxis, hypersensitiveness, idiosyncrasy, there is no exact definition, nor is there any that are recognized as even provisionally satisfactory." He regards them as members of the unclassified series not sharply separated one from another. Also Cinser believes that different forms of allergy merely represent different quantitative participation of different factors.

Even the leading students of skin allergy betray this haziness of view. Thus Prosser White, than whom none has contributed more to the clinical study of ergodermatoses, in one place uses the term idiosyncrasia in the generally accepted sense of hypersensitiveness to a specific irritant: in the other he regards it synonymous with predisposition and diathesis, and draws a detailed table to differentiate it from allergy and anaphylaxis.

Similarly Oppenheimer, another leading student of ergodermatoses, betrays the vagueness and haziness of the allergic concepts in his classification of ergodermatoses. The three types of ergodermatoses suggested by him can hardly be differentiated one from another, but apparently overlap each other. He differentiates anaphylaxis from idiosyncrasy and puts them in different groups of classification. Yet serologists and allergists concur in regarding them as synonymous.

It is surprising how few attempts have been made to formulate the guiding principles and factors to be considered in the evaluation of the compensability of ergodermatoses. The most authoritative and comprehensive treatise in English on the subject, by Prosser White, is an extremely valuable manual, compiling an enormous clinical material. White's classification of ergodermatoses is based essentially on the type of occupational irritant producing the different chemical and pathologic changes in the skin. However, White does not offer to the clinician any system of principles or practical guidance in evaluating ergodermatoses.

Oppenheimer has compiled a similar but more elaborate and illustrated treatise comprising a tremendous clinical experience. Neither does this manual offer any guidance to the clinician. I was not able to find in the literature any systematic analytical study of the various types of ergodermatoses, and various factors to be considered in the evaluation of their compensability.

The modern theoretical concepts of skin sensitization, variously termed allergy, anaphylaxis, idiosyncrasy, or atopy, and the modern technique of skin allergic tests, including the patch test, have rendered matters if anything more complicated.

DEFINITION OF ERGODERMATOSES

The industrial dermatoses, in the usually accepted sense, can be defined as absorption or contact dermatoses caused by any of the physical or chemical occupational irritants, solid, liquid, or gaseous.

Two major factors determine the type and the intensity of the skin reaction; 1, the biologic makeup and resistance of individual skin; 2, the character and the intensity of the occupational irritant.

The clinical manifestation of ergodermatoses may assume the form of a more or less specific traumatic lesion, characteristic for various trades, termed by Oppenheimer as "occupational stigmata." Such are, for instance, stains and coloring, stratifications, excoriations, nail changes, pigmentation, callosities, teleangiectases, brusae, cicatrices and tattooing.

Ergodermatoses more often assume that general nondifferentiated form of the inflammatory skin reaction known under the name of eczema or dermatitis. It can be stated here that the consensus of opinion among the modern leaders of dermatologic thought is that these two conceptions cannot be differentiated, neither morphologically nor histopathologically, nor clinically, and that they should be regarded as identical and interchangeable concepts.

---

* From the department of dermatology, College of Medical Evangelists.

* Read before the Dermatology and Syphilology Section of the California Medical Association at the sixty-first annual session, Pasadena, May 2–5, 1932.

The simple type of ergodermatosis which leads to no difficulties in rendering judgment on compensability is one in which the occupational irritant is of unusual intensity, or which, because of unduly long exposure, breaks down the normal resistance of the skin.

The final clinical proof of such ergodermatosis is that the lesions clear up rapidly after the exposure to this particular industrial irritant has ceased.

INFECTIOUS ERGODERMATOSES

A common and clear-cut type of ergodermatoses is that caused by chemical or traumatic irritants and manifested clinically by eczema. To this group belong numerous cases of occupational dermatitis which occur in housekeepers from the irritation by soap and water, in physicians from antiseptics, dentists from novocain, gardeners and orchard workers from substances such as sulphur, arsenic and fertilizers. Ergodermatoses of this type may be acute or chronic, they are easily identified, commonly free from complications, and clear up after the cessation of exposure to the irritant agents. However, bacterial or mycotic infections of various types may be contracted during work, or may develop as a secondary complication. The most common type of infection is pyogenic, staphylococci, streptococci or mixed. However, many other animal and vegetable parasitic infections are observed in many trades where workmen come in contact with animal or vegetable matter. Scabies, pediculosis ventricoides, sporotrichosis, blastomycosis, erysipeloid and other infections occur in stablemen, farmers, gardeners, butchers and allied trades.

Epidermophytosis, because of its almost universal distribution, must be considered separately and not be accepted as occupational, unless under very exceptional circumstances.

Exceptionally, infections such as syphilis can be occupational, such as syphilitic chancres on the fingers of gynocologists and midwives. Chancre on the lip in a glass blower was directly traced to a glass tube of a fellow worker who had syphilitic lesions in the mouth. Ergodermatoses of these types of unusual infections, however, seldom present serious difficulties of establishing their occupational origin.

PYOGENIC ERGODERMATOSES

Pyogenic infection so frequently complicates ergodermatoses, primarily or secondarily, that it deserves to be considered as a separate group. The clinical manifestations of the pyogenic infection are manifold. It may occur as ordinary impetigo, pyogenic folliculitis, furuncle, eczema, cellulitis, or erysipelas. It may start as impetigo and undergo secondary eczematization, or may develop superimposed secondarily on the occupational dermatitis. In either case the final picture may be very much the same, that of impetiginous eczema.

The paramount importance of irritational and traumatic insults to the skin as an etiologic factor of pyogenic infection was realized and ably emphasized by Engman as early as 1902, and reemphasized by Fordyce in 1911. He described a new clinical form of eczema which he called infectious eczematoid dermatitis (a somewhat redundant name from a modern point of view), which corresponds morphologically to pyodermite or streptodermite of the French clinicians. He describes it as an eczema with fairly well-defined borders, and a tendency to form heavy purulent crusts and itching much milder than is observed in common eczema. He emphasized the fact that this type of eczema develops after trauma and is likely to spread beyond the area of original occupational irritation, and has a strong tendency to recurrences and fluctuations.

Impetiginous eczemas are a very common sequel to multiple excoriations and erosions incidental in many trades. It is hard to see how the original traumatic or chemical ergodermatosis can be disclaimed as the etiologic factor in the causation of such sensitization to pyogenic infection. The fact that the new attacks of such pyodermites occur after the patient gives up his work, does not, in my opinion, affect the validity of the claim, since ordinary daily life provides manifold opportunities for superficial excoriations and erosions sufficient to rekindle a pyogenic attack.

The sensitization of the skin to pyogenic microorganisms is a well established clinical fact. It is seen in erysipelas and furunculosis. The capacity of streptococci to produce allergic skin phenomena reactions has been demonstrated by Ravaut, who produced allergic skin reactions in cases of pyodermites.

It is plausible, therefore, to assume that the traumatic and occupational insults may bring out the sensitization of the skin to the pyogenic antigens and render the skin susceptible and predisposed to recurrent attacks of pyodermia.

ERGODERMATOSES WITH SYSTEMIC BACKGROUND

Systemic pathogenic factors enter heavily into the problem of ergodermatoses and constitute one of the most difficult factors in the evolution of compensability. Usually the systemic factors serve as predisposing ground on which the occupational noxae, not sufficiently irritating to cause a skin irritation in a normal individual, bring out an acute skin reaction, even if the exposure was not unduly prolonged.

Such systemic predisposing factors may be the so-called eczematous or exudative diathesis, seborrhea, xeroderma or ichtyosis, senility, or any of the systemic dyscrasias such as diabetes, hypothyroidis or syphilis. It may also happen that one of the commonly known occupational skin irritants strikes an individual with the systemic dyscrasia of an excessively dry or excessively moist skin, which conditions render it more vulnerable to chemical and traumatic irritants.

In both cases the induced ergodermatosis is either of greater intensity than it would be in an individual of normal resistance, or, as it often happens, the ergodermatosis assumes a sluggish and chronic course because of the low recuperative power. These cases, more than any others, give rise to controversy and difference of opinion between special examiners and referees of industrial commissions.

Ordinarily, in the beginning, the dermatitis is accepted as industrial. It is only after it fails to clear up, in spite of the cessation of the work, and continues its sluggish course, that the interplay of systemic factors begins to be suspected and the compensability of the dermatosis is questioned.

There is some validity on both sides of the argument. It is true that the prolongation of the disability in these cases is not due to the occupational irritants but to the systemic factors. So, technically, the claim of compensation does not seem to be justified. Yet it must be considered that this disability would not be in existence if it were not caused originally by the occupational irritants.

It seems that the principles of the interplay of the systemic predisposing factors and traumatic insults, and their importance as determinants in the localization of skin lesions are not yet fully understood. It has been clinically and experimentally established that trauma acts as a strong determinant factor of the localization of the systemic toxins or bacterial emboli. This has been strikingly demonstrated by Freed and Siegel, who have produced experimentally in animals multiple trichophytids by the superficial scarification of the skin after intravenous injections of trichophytin.

Prosser White rightly accepts and emphasizes the importance of a traumatic and chemical irritation in bringing out systemic dyscrasias. He cites the case of a syphilitic gummatous ulcer developing on a shoemaker's hand at the site of the pressure of tools. White correctly states that without syphilis he would not have the ulcer, but that also without the friction of the tools he would not develop a sore on his hand. In other words, he still would have his syphilis but would not be disabled by the ulceration precipitated by the local traumatization. To what extent these cases are compensable is a matter of individual opinion. I believe that such cases are partly compensable; that is, they should be compensated until the local lesion causing disability is cured.

It is much harder to evaluate the degree of the compensability in cases in which ergodermatosis is aggravated or rendered chronic by systemic pathology or irremovable systemic disability, such as senility. Following the above cited line of reasoning, I believe that a principle of partial disability, half or a third part of the established rate for the time of the duration of disability, could be adopted in these cases.

DIAGNOSIS OF ERGODERMATOSES

The correct diagnosis of ergodermatoses is not only a matter of clinical interest, but also of considerable economic and medico-legal significance. The identification of ergodermatoses or morphologic features alone is possible only in cases of specific skin lesions called by Oppenheimer "occupational stigmata," characteristic for various trades. The majority of ergodermatoses, however, are manifested by an eczematoid rash, the undifferentiated and protean skin reaction.

It is an accepted dermatologic axiom, enounced first by Benier, that different etiologic factors may produce skin eruptions of the same morphologic type, and vice versa. This is particularly true in cases caused by chemical and traumatic irritants.

Only bacterial and mycotic eczemas present characteristic morphologic group features differentiating them from common contact derma or systemic dermatitides or eczemas. Such features are sharply defined borders, circinate and gyrate shape, clearing center and marginal activity with scaly epidermal collarette or vesicles. Yet this morphologic differentiation is readily demonstrable only in cases of the primary mycotic or bacterial infection. However, infection, particularly pyogenic, is often secondary to a primary contact dermatitis caused by chemical or physical irritants. In these cases, presenting a mixed morphology of infections and contact dermatitis, the identification of the occupational origin of dermatosis on the morphology alone is practically impossible.

Prosser White offers a differentiation table between what he calls traumatic occupational and idiopathic eczema. His differentiation is not convincing, can hardly be of much help to the average clinician, and is not in accord with general clinical experience.

The only differential point which can be accepted without challenge or doubt is that the ergodermatosis increases or decreases in intensity in proportion to the degree of exposure, or the intensity of the occupational irritant and that the ergodermatosis does not recur when the occupational irritant is removed.

PATCH TEST

Up to recently the accepted laboratory tests for establishing the identity of the substance or chemical causing a contact dermatitis were the scratch and intradermic allergic skin tests. Lately a new modification of the same principle in the form of the patch test has been introduced by Bruno Bloch.

Theoretically the patch test is much more rational, as it closely approaches the mechanics of the original occupational skin irritation and merely reproduces it on a small scale. The practical use of it has established its value in a considerable number of cases, but its limitations and weaknesses have also been brought out. This has been well shown in a recent article by Sulsberger and Wise.

Before the patch test is applied, one of the few specific occupational irritants has to be selected among those suggested by the history as the most likely offending agent. The skin reaction resulting, if the test is positive, must be of the same type as the original ergodermatosis. Just as in the scratch and intracutaneous allergic tests, the negative reaction of the patch test is not conclusive because of the possibility of anergy or temporary desensitization. What is more puzzling and embarrassing to a clinician is the possibility of variations in the cutaneous allergy in the various parts of the body. Thus, in cases of eye dermatitis from eye drops or mascara or cosmetics, the arm or chest may show a negative reaction with the patch test. Another confusing phenomenon, pointed out by Bloch, is that in some cases the specific monovalent sensitization gradually induces a polyvalent sensitization to many related and unrelated substances. Furthermore, it was pointed out by Oppenheimer that the patch test cannot reproduce all the manifold conditions under which the original ergodermatosis has developed.

The reports of various observers differ greatly as to practical value of the patch test. Steiner gives only 12 per cent of positive reactions while Sulzberger and Wise claim 50 to 59 per cent of positive tests. At the present state of our knowledge and clinical experience it seems safe to conclude that the patch test is a useful procedure, but is not fool proof.

Whether it can be used as a prophylactic practical test in gauging the sensitivity of the skin of the industrial applicants in various trades to individual occupational irritants remains to be seen. It seems to be worthy of trial as there is nothing better available for the purpose.

One weakness of the patch test, in my opinion, is the static conception implied by it that the skin sensitivity is a stable phenomenon remaining stationary under different endogenic and ectogenic factors, and that it does not take into account the possibility of a fluctuation of the skin allergy under various systemic, somatic, neurogenic and even psychogenic factors.

SUMMARY AND CONCLUSIONS

In conclusion, the following deductions seem to be justified by the preceding discussion.

1. Ergodermatosis is a complex clinical phenomenon. Its pathogenesis cannot be explained by allergy alone.

2. Diagnosis of ergodermatoses cannot be made on morphology alone, but only on the combined evaluation of all factors.

3. The patch test is a useful procedure, but it has its limitations. It should be tried in preventive diagnosis of industrial skin allergy.

4. Systemic pathology of hereditary or acquired nature often complicates ergodermatoses as a predisposing or aggravating factor.

5. In ergodermatoses with a systemic background a partial compensation seems to be warranted.

6. The principle of partial compensation should be introduced in industrial claim adjustment, as in many cases the responsibility cannot be separated between the two factors, industrial irritants and systemic background.

7. The principle of recognizing the trauma as an important determinant of the localization of the systemic metabolic or bacterial toxins must be accepted for a correct interpretation of ergodermatoses.

8. In ergodermatoses with systemic background the compensation is warranted only for the period of duration of the ergodermatosis, but not for the recurrences developing after the cessation of the exposures to occupational irritants.

1930 Wilshire Boulevard.

REFERENCES

1. Coca-Allergy. Textbook, 1930.
2. White, Prosser: The Ergodermatoses, 1926, New York.
3. Oppenheimer: Manual, 1926. Leipzig. Also Med. Press and Circular, 169:66, 1924.
4. Engman: Infectious Eczematoid Dermatitis, J. A. M. A., 4:709, 1902.
5. Fordyce: Infectious Eczematoid Dermatitis, J. Cut. Dis. (March), 1911.
6. Ravaut: Streptococcides, Presse Medicale, 1928.
7. Bloch, Bruno: J. of State Med., 38:373, 1930.

DISCUSSION

H. SUTHERLAND CAMPBELL, M. D. (1930 Wilshire Boulevard, Los Angeles).—The paper under discussion adequately covers the subject matter. In conjunction with all other works, however, it only renders the subject of differential diagnosis more opaque than heretofore. However, in spite of the opacity induced by research, some imagine that a claim to advancement is in order.

It would appear that the somewhat extreme differences of opinion regarding compensation awards which exist in the two branches of medicine most concerned, viz., dermatology and surgery, rest solely and fundamentally upon the fact that the accident in dermatology is practically always insidious. It may occur by means of an agent with which the patient has been in contact for years. The claimant himself is often doubtful as to the cause, merely suspecting it. In surgery, on the other hand, etiologic diagnosis becomes a comparatively simple matter, as no person suffering from a broken leg sustained by falling off a ladder while at work has ever been known to express doubt as to what was the actual cause of his incapacitation. Thus the simple difference is that the one is a perfectly apparent accident, the other a somewhat insidious one.

It must be admitted that many dermatological cases come to hand where the differentiation is simple but where one enters into the commoner eczematoid domain, one is often justifiably at a loss in spite of the merits of the patch test—this being so basically, fundamentally and logically because of our incomplete knowledge of the subject matter itself.

It also seems incredible that even today the finding of a fungus sometimes invalidates a proper claim. We have already demonstrated that among certain orange workers presenting paronychia, due to fungi, their occupation was undoubtedly at fault. A further series with which we are at present occupied, all fungus infections, are in some instances proving themselves to be due to occupation.

In previous years the salient diagnostic feature of occupational dermatitis was its distribution. This fundamental has apparently been taken away from us following reports on regional sensitivity by more recent workers.

Much has been said and written which appears to be vastly concerned with the matter of unjust compensation awards as applying to the interests of the insurance companies. The safeguarding of the claimant, apparently a negative consideration, is perhaps decidedly quixotic. Nevertheless, it must in all fairness be conceded that insurance companies undertake the risk of compensation for monetary consideration. It would appear in the face of the foregoing that cold, unemotional logic points to awarding for the claimant in the face of a definite and reasonable degree of suspicion, inasmuch as proof is often impossible of attainment. Unfortunately it sometimes appears that the reverse obtains and it is perhaps to be expected under circumstances which obviously demand a greater degree of courage to affirm claims than to negative them.

⁂

Stuart C. Way, M. D. (490 Post Street, San Francisco).—This paper brings to our attention a subject, endlessly disputed, whose solution lies in the distant future, if at all.

Certainly much could be done in simplifying the problem by making:

1. *A Correct and Early Diagnosis.*—Trained specialists alone can accomplish this, by a careful review of each case, giving the necessary attention not only to the irritants encountered at work, but those at home. The age of the patient, the type of skin, internal factors such as food and an accurate history of previous skin trouble all enter into the solution of the problem.

2. *Thorough Laboratory Examinations.*—The Kline precipitation test now renders the exclusion of lues a matter of minutes and is proving very reliable. Gummata due to traumatism are often unrecognized. Scabies, too, is responsible for many of our cases of alleged cement, lettuce and poison oak dermatitis.

3. *The Patch test* has its limitations, but some of these can be overcome by recalling that susceptibility is not a permanent state but subject to internal and external influences such as diet, focal infection and the elements. Also sensitization may be present in one area of the skin and absent in other areas.

4. *Compensation* in the ergodermatoses should be governed by the actual damage done to the patient rather than by the duration of the injury which is often prolonged by extraneous factors, overtreatment, etc. Because of increased vulnerability of the skin after forty, age becomes an important factor and accounts for the chronicity of many dermatoses. Recurrences are sometimes accounted for by home contacts.

5. *Disputes* in handling and in the status of industrial dermatoses could be appreciably reduced by a careful rating of the worker according to age, physical condition and previous skin troubles.

6. *Protection* against irritants encountered in the industrial world should be studied by qualified men and the knowledge gained imparted to those concerned.

Insurance companies should realize that it is much less expensive in the end to have dermatologic cases seen by qualified, experienced dermatologists. Disability is often prolonged by faulty diagnosis and maltreatment.

⁂

Stanley O. Chambers, M. D. (1260 Roosevelt Building, Los Angeles).—The absence of an etiologic understanding in many common dermatoses leads to theoretical, though just conclusions. It is often necessary in dermatologic practice to associate a clinical picture with environment in determining causation. This is particularly true in the study of so-called industrial or occupational skin diseases. Our medical fathers had no alternative. Methods of investigation had not been identified. Medical progress, however, has opened a field which promises even greater practicality and accuracy than has so far been developed. This new phase of investigation in occupational dermatoses has been well brought out in Doctor Scholtz's discussion. The clinician now need not only suspect a relation between cause and effect, but with little difficulty can demonstrate it.

The clinical similarity between certain mycotic infections and so-called diathetic eczema to that dermatitis produced by contact irritants has undoubtedly, in the past, lead to error and unjust compensation.

EPILEPSY IN CHILDREN*

WITH PARTICULAR REFERENCE TO THE KETOGENIC DIET

By Howard R. Cooder, M. D.
Los Angeles

Discussion *by J. M. Nielsen, M. D., Los Angeles; William Palmer Lucas, M. D., San Francisco; Henry Douglas Eaton, M. D., Los Angeles.*

The following report is based upon one hundred cases of epilepsy in children up to twelve years of age treated in a special clinic of the Los Angeles Children's Hospital during the past three years. The proportion of these one hundred cases to a total of seventeen thousand admissions to the General Clinic is 0.6 per cent, which corresponds to statements that the incidence of epilepsy in children is from one-half to one per cent. Our one hundred cases have been classified as follows:

Major epilepsy (grand mal)	52
Major and minor epilepsy	16
Minor epilepsy (petit mal)	14
Jacksonian epilepsy	6
Pyknolepsy	4
Hystero-epilepsy	2
Epileptic equivalents	6

Major Epilepsy.—Major epilepsy includes the majority of the cases. The onset is sudden, sometimes with a warning, or aura, in a very few with a cry. In nearly all major cases loss of consciousness is early and complete. The child may fall, but as many children have their attacks only at night or during naps or while playing on the floor, the fall is not always a part of the attack. Tonus and clonus may supervene in order, but more frequently occur together in quite irregular fashion. Attacks last from one to five minutes in most cases, occasionally longer. Sleep of an hour or less usually follows and a few children are fretful or otherwise perturbed for a few hours to a day afterward, but many recover quickly and go about their activities without showing that they have had a convulsion.

A number of our patients have both major and minor attacks, sometimes frequent minor with an occasional severe attack, sometimes an equal number of both. A few who formerly had only one type now have only the other type; it happens that of our patients there are more who have passed from a former major epilepsy to a present minor epilepsy.

Petit Mal.—The minor type of epilepsy, or petit mal, includes a large number of transient seizures, spells, lapses of short duration, from a few seconds to a minute. There may or may not be loss of consciousness, the eyes roll up, a passing shudder or stiffness occurs. Although the minor attack is not nearly so long or so severe as a major seizure, the postconvulsive sequelae of sleep, mental confusion, or fretfulness are just as likely to occur, and it appears that the ultimate effect upon the personality and mentality of the child are as much to be feared from the one variety as from the other.

---

* Read before the Pediatric Section of the California Medical Association at the sixty-first annual session, Pasadena, May 2-5, 1932.

Jacksonian Epilepsy. — Jacksonian epilepsy in our six cases has conformed to the classical description of spasm beginning in an extremity of one side and successively involving the muscle groups of that side, consciousness not being lost until the convulsion has become generalized.

Pyknolepsy.—Pyknolepsy is remarkable for the great number of spasms of a very minor nature which may occur in one day, as many as a hundred or more. They consist of a transitory staring, turning up of the eyes, blankness, stopping of activity, of not more than ten seconds' duration. It is difficult to say if there is loss of consciousness; there is never any convulsion. The condition is described by Sachs [1] and also by Thomson [2] in almost identical words. It is very resistant to treatment, but tends to disappear by itself after more or less time. It is probably not epilepsy at all, nevertheless a case of it deserves to be watched until it has been differentiated from the more serious disorder.

Hystero-Epilepsy.—Hystero-epilepsy describes seizures which are identical with epilepsy in many ways, but which occur only under circumstances of stress, emotion, or while the patient is under examination, a thing which seldom is true of genuine epilepsy. It is not nearly so common in children under ten as in those of adolescent years or older. We have had two cases.

Epileptic Equivalents. — Epileptic equivalents include a number of conditions other than seizures which, by their periodic occurrence, their involuntary nature and occasional development later into true epilepsy, require treatment as for the latter. Attacks of mental confusion, transient changes in disposition, certain hallucinations similar to aurae, and migraine, may be considered under this heading.

ETIOLOGY

For many years neurologists and pathologists have sought unsuccessfully for a characteristic lesion of brain or nerve substance. More recently the causes of epilepsy have been pursued in the avenues of biochemistry, endocrinology, psychology, without an answer to the problem. Etiology is thoroughly reviewed in the monograph by Lennox and Cobb.[3] There are many theories of cause, no one much better than another. As these authors say, we are in need, not of more theories, but of more facts. Researches like the work of L. O. Morgan,[4] who has produced epilepsy in animals by injecting destructive substances into certain nuclei at the base of the brain, are a definite help. In the end it may come, as Hughlings-Jackson said forty years ago, to the fine point of recognizing the difference between cells which react with convulsions and cells which do not.

TREATMENT

The really great advances in the treatment of epilepsy have been made in the last ten years by the researches of biochemistry and metabolism. They include: fasting, dehydration, and the ketogenic diet.

These methods have been suggested by clinical observation and laboratory study of body conditions before and after fits, by attempts to produce sedation, and by careful correlation of the successful results of all forms of treatment.

Fasting.—Fasting is one of the many forms of treatment which has been in more or less use for years, but it received its first serious examination by Geyelin [5] in 1921, who studied twenty-six cases upon fasts of twenty days. Fasting is an effective dehydrating measure and causes ketosis. As a sole method of therapy it is discountenanced by some workers. In small children it certainly cannot be maintained for more than a few days at a time. In cases which we have selected for special study we have found that a five-day fast is an excellent way to introduce the ketogenic diet.

Dehydration.—For a long time the finding of edema of the brains of epileptics at autopsy, and of "wet brains" when epileptic patients were operated upon for decompression or exploration, has focused attention upon the possible advantages of limiting the water intake of these subjects. More recently this matter has been studied by McQuarrie,[6] who has been able to effect cessation of convulsions by restricting water and increase of convulsions by forcing fluids. It is a form of treatment difficult to maintain with children, unless they are in bed, because the fluids have to be limited to no more than 200 to 300 cubic centimeters per day. As a single method of treatment, we do not consider it superior to the ketogenic diet, and we have shown in some twelve to fifteen cases kept in the hospital for a trial period that the diet will produce just as effective dehydration as water restriction. Dehydration is, nevertheless, an important underlying cause or result in several forms of treatment and deserves consideration.

The Ketogenic Diet.—This was developed in 1921 by Wilder [7] from his experiments with fasting, in order that he might prolong ketosis which he had noticed was a constant occurrence in patients upon a fast. The ketone bodies, acetone, aceto-acetic acid, and b-oxybutyric acid are produced in the body under certain abnormal conditions, as the acute febrile illnesses of children; also they occur promptly upon a complete fast and upon a diet high in fat and low in carbohydrate. In the latter case it is the incomplete hydrolysis of excess fat which results in the ketone bodies. Persons vary in their ability to burn fat, and of a number of children upon the same ratio of ketogenic diet the majority will show a strong acetone reaction in the urine, while a small number will exhibit a slight or inconstant excretion of acetone. Heinbecker,[8] working with a group of Eskimos

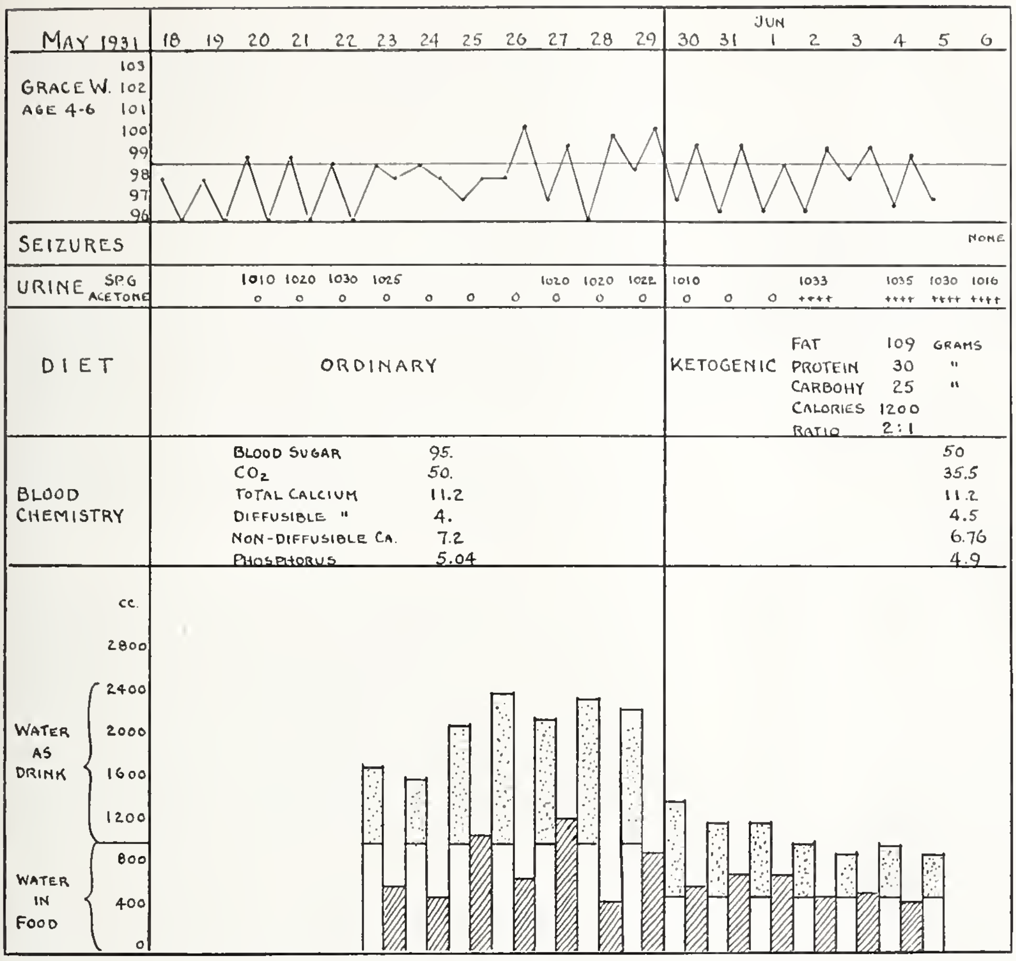


Chart 1.—Chart showing the prompt reduction of water intake and output upon beginning the Ketogenic Diet.

upon experimental starvation, found that they developed no ketosis whatever.

Ketosis is present for months at a time in our patients without presenting any of the unfavorable symptoms of its related state, acidosis. Of ten cases upon whom the CO_2 combining power of the plasma has been determined, only one showed a low figure (35 vols. per cent); there was, however, no clinical evidence of acidosis.

Prescribing a ketogenic diet is greatly facilitated by the use of a table such as that in the book by Talbot,[9] which gives a complete discussion and instructions. We set the figure for protein at a minimum of 1.5 grams per kilogram of body weight. The majority of children do not complain, and only two of one hundred have been made ill by the unusual food. Much of the success of this work is due to the skill of our special dietitian in designing various alternatives and frequent changes, so that the children are kept interested.

Within three days acetone appears in the urine and its presence is used as a test of whether the patient is eating all of his diet and is eating nothing else. It is an easy test and is fairly reliable; nevertheless a few of our patients who have been very careful, and who have been free of attacks for a long time, have seldom or never showed any acetone in the urine. Within the first week there is nearly always a loss of three to five pounds weight, due to dehydration. The patients all soon show physical improvement, better color, better expression and tissue turgor, and a number of minor betterments are usually reported by the parents, many of which are merely the results of a more systematic way of living. The patients report to the clinic at first once a week, then every two weeks, and when attacks are finally stopped, once a month. After a year of freedom from seizures we allow them to resume gradually an ordinary diet. Of our series there have been no relapses, but our number is too small to make a pronouncement upon this matter.

The ketogenic diet has now been in use for nearly ten years,[10] and it may fairlly be said to be the most valuable single therapeutic measure in the present list for the treatment of epilepsy. Its superiority is not only because of its greater effectiveness, but because it can be continuously maintained for an indefinite period, while some of the other forms of treatment cannot be.

Phenobarbital (Luminal).—We use this drug only as a supplement to the ketogenic diet when the latter has been on trial for three months without producing improvement in attacks. Helmholz and Keith [10] have stated that these two forms of treatment often effect a better result than either one alone. We give one, or one and one-half grain doses at bedtime, and occasionally an additional three-fourths grain in the morning. There have been no disturbing symptoms with phenobarbital as high as three grains per day over periods of many months. Only one child developed a rash.

Clinical Management.—It is important to use persistence in treating epilepsy, either as private patients or in clinics. Our successful patients may roughly be divided into three groups: those whose attacks stop promptly and completely at the commencement of the diet; those whose attacks gradually diminish to zero; and those upon whom the treatment seems to make no effect until weeks or months later, when their seizures may be suddenly and effectively terminated. It does not seem to be possible to foretell what will be the success of any one case.

If a patient misses two visits to the clinic, a social service worker is sent to use every effort to get him to return. Of fifty-five patients who have left our clinic before being discharged, we have reports on the present condition of forty-seven; only one is said to be free of attacks, the majority are still having them, and a few are improved. This shows that with those who have left treatment there has not been a trend to spontaneous recovery.

ANALYSIS OF RESULTS

Total patients received in three years by the clinic, 100.

Patients at present under observation, 45.

Recent patients (less than three months), 7.

Patients treated more than three months, 38.

Patients free of seizures more than three months, 19, or 50 per cent.

Patients improved, 13, or 34 per cent.

Patients not improved, 6, or 16 per cent.

SUMMARY

A report is presented of one hundred cases of epilepsy treated in a special clinic of the Los Angeles Children's Hospital.

A distribution is made of these cases into clinical varieties of epileptic seizures, which are described.

Etiology is still in the theoretical state and is not discussed in this paper.

Of treatment the metabolic methods are described. Fasting is effective but impractical. Dehydration is important and may be the underlying factor in all successful treatment. Water restriction is difficult to carry out. The ketogenic diet has been the method of choice because of its superior effect and its practical nature. Phenobarbital has been used in conjunction with the diet.

Some points of clinical management are emphasized.

An analysis of results is presented.

3875 Wilshire Boulevard.

REFERENCES

1. Sachs, B., and Hausman, L.: Nervous and Mental Disorders from Birth to Adolescence. Paul B. Hoeber, Inc., New York, 1926.
2. Thomson, John: The Clinical Study and Treatment of Sick Children. Oliver and Boyd, Edinburgh, 1925.
3. Lennox, W. G., and Cobb, Stanley: Epilepsy, Medicine, 7:105-290 (May), 1928.
4. Morgan, L. O.: The Nuclei of the Region of the Tuber Cinereum, Arch. Neurol. and Psychiat., 24:267-299 (Aug.), 1930.
5. Geyelin, H. R.: Fasting as a Method for Treating Epilepsy, Med. Rec., 99:1037-1038 (June 11), 1921.
6. McQuarrie, I.: Epilepsy in Children—The Relationship of Water Balance to the Occurrence of Seizures, Am. J. Dis. Child., 38:451-467 (Sept.), 1929.
7. Wilder, R. M., and Winter, M. D.: The Threshold of Ketogenesis, J. Biol. Chem., 52:393-401 (June), 1922.
8. Heinbecker, P.: Studies on the Metabolism of Eskimos, J. Biol. Chem., 80:461-475 (Dec.), 1928.
9. Talbot, F. B.: Treatment of Epilepsy. The Macmillan Company, New York, 1930.
10. Helmholz, H. F., and Keith, H. M.: Eight Years' Experience with the Ketogenic Diet in the Treatment of Epilepsy, J. A. M. A., 95:707 (Sept. 30), 1930.

DISCUSSION

J. M. Nielsen, M. D. (1253 Roosevelt Building, Los Angeles).—It has been my privilege to see many of these patients with the author for the purpose of separating those with organic central nervous system pathology from the so-called idiopathic group. In a considerable percentage of patients one can discover evidence of brain damage: birth trauma, encephalitis, meningovascular lues, various degrees of agenesis, etc. When the condition of the patient justifies it surgical intervention is attempted; but when years have elapsed since an obvious injury surgery is ordinarily useless and the treatment resolves itself into the treatment of idiopathic epilepsy (symptomatic therapy). It is along this line that the author has done a great deal of work.

The surprising fact has been demonstrated that a symptomatic epilepsy responds to dehydration and ketogenic diet just as well as or even better than an idiopathic one.

In adults dehydration is apparently the most potent single factor in the treatment. But in childhood, in cases of home treatment, it is almost impossible to carry out. We have gone to the extreme of removing all faucets in the home, only to have the child steal water outside. In our private practice we urge restriction of fluid intake, but do not rigorously enforce it in children. On the other hand, the ketogenic diet which does relatively little good in adults is a potent remedy in childhood, as the paper well demonstrates.

⁂

William Palmer Lucas, M. D. (490 Post Street, San Francisco).—Doctor Cooder's analysis of the one hundred cases of epilepsy which they have treated at the special clinic of the Los Angeles Children's Hospital represents a fine piece of clinical research investigation. It is from this type of work that we get our most accurate and fundamental knowledge of these most difficult cases. It is entirely a different problem to straighten out a case of epilepsy in the hospital, where you have the patients under absolute control, than when they are at home, or supervised from a clinic.

In regard to the treatment advocated by Doctor Cooder, I think he has been very conservative in his estimate of the various types of treatment. There is no question but that the ketogenic diet in many cases has proved its value. It is very much more difficult to carry out restriction of water intake in private practice and in clinic patients than it is while the patient is in a hospital bed, where absolute control can be kept over the water intake. However, with coöperative patients, a good many will stay on the low fluid intake. These patients usually are the ones that show the greatest reduction in the number of seizures, but unless we have the coöperation of the family and the child it is almost impossible to carry out the dehydration treatment.

I think everybody is of the opinion that phenobarbital should be used in conjunction with both the dietary and dehydration treatment.

⁂

Henry Douglas Eaton, M. D. (1136 West Sixth Street, Los Angeles).—The treatment of epilepsy has always been a discouraging matter. Ketosis and dehydration have unquestionably demonstrated their value as therapeutic agents. Doctor Cooder's excellent paper proves the practicability of using this type of treatment successfully in an out-patient clinic. His results compare very favorably with those obtained with hospital control of the patient and with results in private cases, where one would perhaps expect more intelligent coöperation from the families.

In my own practice I do not use the ketogenic diet in adults, but find it valuable in children. In adults, fluid restriction, combined with medication, has proven of most value. Medication alone will control convulsions in a definite percentage of cases without apparent deleterious effects.

The author is to be congratulated on a careful and valuable clinical study. It is to be hoped that he will publish his further observations.

⁂

Doctor Cooder, (Closing).—All of the doctors, in discussing this paper, have stressed dehydration as a form of treatment. It is not agreed by all investigators, however, that dehydration is the final factor which brings about the cure of epilepsy. Following water loss there may be more particular changes, *e. g.,* alterations in mineral balance, as has been brought out by the work of Bridge and Iob. Voluntary limitation of water intake is difficult to teach to children, and its enforcement in a large clinic throws too much dependence upon the self-control of the little patients. It has been shown that the ketogenic diet brings about a lessened intake of water equal to what can be accomplished with fluid limitation and with no persuasive effort.

The ketogenic diet has its percentage of failures, but it is the most successful single therapeutic measure today and it can be safely continued over a long time.

I agree with Doctor Nielsen that cases of Jacksonian epilepsy, in spite of their one-sided and focal manifestations, respond just as well to this treatment as the generalized, idiopathic type.

ACUTE PERFORATED PEPTIC ULCERS*

A CLINICAL REVIEW OF ONE HUNDRED AND FIFTY-FIVE CONSECUTIVE PATIENTS TREATED SURGICALLY

By George K. Rhodes, M. D.
San Francisco
and
Donald C. Collins, M. D.
Rochester, Minn.

Discussion *by Burns Chaffee, M. D., Long Beach; John Homer Woolsey, M. D., San Francisco; Thomas O. Burger, M. D., San Diego.*

According to Watson,[1] the earliest account of a perforated gastric ulcer was presented to the Royal Society in 1729 by Christopher Rawlinson. In this country O'Hara [2] reported the first example to the Philadelphia Pathological Society in 1875. The first successful surgical excision of a perforated duodenal ulcer was reported by Dean [3] in 1894. Since that date an ever-increasing amount of literature has accumulated which crystallizes our thoughts as to early diagnosis and treatment.

The subject-matter for our present study was obtained from a careful clinical review of 155 consecutive patients with acute perforated peptic ulcer. These patients were treated surgically by the San Francisco Emergency Hospital Service.

What is the probable incidence of acute perforations among patients with a proven peptic ulcer? In 1911 W. J. Mayo [4] reported the occurrence of twenty-five perforations among a series of 272 proven peptic ulcers (10.9 per cent). Trout [5] in 1928 reported a definite increase in acute perforated ulcers among the enlisted men of the United States Army stationed at Hawaii. The incidence increased from one in forty-one (2.5 per cent) in 1922 to one in seven in 1926 (14.4 per cent). Such statements show that the danger of perforation is a factor of considerable importance.

CENSUS OF THE GROUP

This disease is found most frequently in the lower social scale of life, for these individuals as a class are less likely to have proper dietary and medical supervision for their indigestion. This type of patient also is more likely to have poor oral hygiene, and other foci of infection.

Perforated peptic ulcer may occur at the extremes of life. Cecil Finney reports a case in an infant two months old. Our oldest patient was a man of seventy-two years of age. Our series shows the disease to be one of early adult life. The average age was forty years, while about 60 per cent of the patients were in the third and fourth decades of life. Ninety-five per cent of the patients in our series were males.

FACTORS PROBABLY CONTRIBUTING TO THE CAUSE OF ACUTE PERFORATION

1. *Family or Individual Predisposition to Development of Ulcer.*—Among our patients there were three instances where other members of the family had acute perforated ulcers. Two patients reported in this series have each had three emergency operations for this same disease.

2. *Septic Foci and Upper Respiratory Infection.*—It was very noticeable that the majority of these patients had poor oral hygiene, which many investigators believe to be an initiating or aggravating factor in the disease. Of equal significance was the apparent seasonal variation, for 70 per cent of our patients were admitted during the six-month period of winter and spring when acute upper respiratory infections are most prevalent.

3. *Improper Dietary and Medical Supervision.* The social status of these patients as a group precludes satisfactory dietary regimen and intelligent medical supervision of their ulcer problem.

4. *Indiscretion of Diet and Alcoholism.*—In many patients of this series, perforation occurred immediately following an eating or alcoholic drinking orgy. One patient suffered perforation after complying with a fake ulcer "cure" which consisted of a twenty-one-day fast broken by the ingestion of one gallon of milk.

5. *Sustained Physical Effort.*—There seems to be some relation between sustained physical effort and exacerbation of ulcer symptoms and perforation. In several patients of this group, perforation occurred suddenly during the hard physical exertion required by their occupation, but they were unsuccessful in contesting their cases before the Industrial Accident Commission.

CLINICAL PICTURE

Each of us no doubt can recall vividly our first patient suffering from acute perforated peptic ulcer. The initial symptoms and signs may be reviewed by quoting Moynihan's accurate and vividly expressed observation of the catastrophe:

> "When perforation occurs there is a sudden onset of the most intolerable agonizing pain. The pain is hardly exceeded in severity by any that a human being can suffer; the extremity of agony is reached. So profound may the instant impression be that death results. . . . The patient is always prostrate with agony; the eyes are wide and watchful; beads of sweat stand out upon the brow and the lines are quickly graven on the cheeks. The patient breathes shortly and quickly; he cannot take a deep inspiration. . . . the attempt to do so ends in a groan or shout of agony and a spasm of pain. The answers to one's questions are given in snatches and every expiratory phase ends

---

* From the department of surgery, University of California Medical School, and the Department of Health, San Francisco, California.

* Read before the General Surgery Section of the California Medical Association at the sixty-first annual session, Pasadena, May 2–5, 1932.

abruptly in a catch. . . . It will be found that the abdominal wall is tight; it is held with a rigidity that never for one moment slackens."

HISTORY

Of what significance is the history of previous peptic ulcer? The majority of these patients will give a history of previous indigestion of varying intensity over a variable length of time. In our own series of 155 patients we were able to elicit a history of some indigestion in 122, or 80 per cent, although many of this group gave a history absolutely negative for peptic ulcer when questioned immediately before surgery. During the agony of the acute attack many of the patients discount entirely or greatly minimize any previous discomfort from indigestion. Hence very often we find the immediate preoperative history surprisingly negative. Of still more significance is the fact that thirty-three of our patients, or 20 per cent, even in the calm of convalescence could recall no symptoms even suggestive of peptic ulcer. That is to say, the acute perforation was the first indication of ulcer. We cannot stress too strongly this well established clinical fact: that a very considerable number of these patients will give a history absolutely negative for ulcer. The physician's apparent lack of knowledge of this fact probably accounts for most of the serious and ofttimes fatal errors in diagnosis.

PROGRESS OF THE DISEASE

Probably no other disease develops with such dramatic suddenness as does acute perforated ulcer. This disorder is unique also in that after a few hours a reactionary period develops and the diagnosis often becomes confusing. If an error in diagnosis still is made, the picture gradually develops into one of advanced general peritonitis. These three phases of the disease will be discussed.

First Stage.—The first stage is that of onset or primary shock which usually lasts from one to two hours. During this period the patient complains bitterly of constant, agonizing, knife-like pains which begin in the epigastrium and rapidly spread over the abdomen. The pains usually are referred to one or both shoulders, to the infraclavicular regions, or around the costal margins. Physical examination at this period reveals essentially those findings observed in primary shock. The skin is cold and clammy, the pulse weak, and the temperature usually is subnormal. There is a moderate leukocytosis and an increase in polymorphonuclear elements. The respirations are jerky, shallow, and thoracic in type, and a deep inspiration usually ends in an expiratory grunt and an exacerbation of the pain. Palpation of the scaphoid-shaped abdomen reveals a complete general rigidity of the abdominal muscles. The term "board-like rigidity" describes well the condition which is almost pathognomonic of this disease in its early stages. Other evidences of general peritoneal irritation are present, such as abdominal, rectal, and "rebound" tenderness.

Nausea and vomiting occurred in 13 per cent of the patients of our series. In most cases the vomiting was nonproductive, but in others the vomitus showed bile or gastric contents. In but two cases was coffee-grounds vomitus recorded, and in no instance was there hematemesis or melena.

Second Stage.—The second stage or reactionary period usually develops between two and twelve hours after the onset of perforation, and is the period when the patient usually first comes under medical observation. He still complains of abdominal and referred pains, but they are less severe. The alarming evidence of primary shock is less noticeable for there is an apparent improvement in the general status of the patient. The temperature and the laboratory findings are essentially those of the first stage. There is, however, the clinical picture of an acute peritonitis resulting from contamination of the abdominal cavity by the gastric content and acid chyme. Also there are the superimposed symptoms and signs of an acute pneumoperitoneum. The anatomical landmarks such as lumbar gutters, roots of mesenteries, etc., help to determine the nature and direction of the spreading peritonitis. Hence, after several hours, we are very likely to find the signs of peritonitis localized to the right lower quadrant, and an erroneous, and often fatal, diagnosis of acute appendicitis is made, the real pathologic changes not being suspected or recognized. Occasionally the peritonitis is so localized to the right upper quadrant that a diagnosis of acute cholecystitis is made, and proper immediate operation is deferred. In any instance where the diagnosis is still in doubt, an x-ray film taken with the patient in a sitting posture usually will reveal the presence of a pneumoperitoneum. In several instances this very valuable diagnostic aid has been most helpful to us in arriving at the correct diagnosis. (The importance of these findings has been stressed by Vaughan and Singer,[6] who report a correct diagnosis by this means of 87.5 per cent in a series of seventy-two proven perforated peptic ulcers.)

The physical examination of this second period is otherwise essentially that described in the first stage. The rigidity may be more localized to the epigastrium, the right upper or the right lower quadrant of the abdomen. Percussion often reveals a diminished liver dullness and some evidence of shifting dullness in the flanks.

Third Stage.—The third or final stage develops insidiously after twelve hours and presents the typical picture of a progressive general peritonitis with the associated paralytic ileus. The very high mortality of patients first treated in these late stages is, of course, the mortality of late neglected peritonitis.

DIFFERENTIAL DIAGNOSIS

What are the errors of diagnosis which are most likely to confuse the picture and hence delay the urgent surgical treatment which is necessary? In our experience, acute inflammation of the gallbladder, of the appendix, and of the pancreas have simulated most frequently the physical examination and findings during the second stage of the disease. The probable reason for this similarity we have already considered. Occasionally an early intestinal obstruction also will give similar findings. Likewise, we have had several instances of acute severe alcoholic gastritis in noncoöperative patients which have simulated very closely the abdominal findings of acute perforated peptic ulcer. The x-ray examination referred to has given us the correct diagnosis in most of these problems, while in others, fortunately, an early exploratory laparotomy revealed the pathologic changes present.

PROPHYLAXIS

The prophylaxis of this disease should of course be directed toward eradicating all possible etiologic factors which are said to cause or aggravate peptic ulcers. These efforts should include careful attention to foci of infection, dietary and medical regimen. This same therapy should be given to our ulcer patients following operation in order to minimize the tendency to recurrence, which is so prevalent.

TREATMENT

The treatment of the acute perforated ulcer by immediate surgery is universally accepted as the method of choice. Delayed diagnosis or temporizing measures in this clinical entity is, as Cope[7] says, "equivalent to a death sentence with very slight chance of reprieve." It is true, however, that perhaps a small number of these patients might survive if intelligent, conservative therapy were instituted promptly. With such a precarious line of treatment, we are gambling that the ulcer will become sealed automatically, as it does occasionally, to the undersurface of the liver or adjacent viscera. We have had the opportunity to see several such patients make a complete and rapid recovery without surgery. Accordingly, we must not be too dogmatic and pessimistic in our prognosis to those patients who refuse proper surgery on account of ignorance or religious (?) scruples.

Type of Anesthesia.—These patients as a class are excellent surgical risks if operated upon within twelve hours, irrespective of the type of anesthetic used. As soon as anesthesia is established, the pulse usually improves and the patient will tolerate well any major gastric surgery contemplated. Where there are no contraindications to its use, we use spinal anesthesia as the anesthetic of choice. The complete relaxation obtained by its use has shortened the time needed and has facilitated both operation and closure.

SURGICAL PROCEDURES

1. *Pathologic Changes.*—Upon opening the abdomen through an upper right rectus incision there is usually an escape of air under tension. The peritoneum is injected acutely and the abdominal viscera are bathed in a large amount of bile-stained, mucoid transudate. As 95 per cent of peptic ulcers are located near the pylorus, this region is explored first. The lesion usually is recognized easily as a perforated peptic ulcer which is surrounded by fresh fibrinous exudate. The size and chronicity of the ulcer found will bear a direct ratio to the duration of clinical symptoms. Fortunately, in most instances perforation occurs when the stomach is empty; hence the cultures are not grossly contaminated and are frequently sterile. The pathologic picture presented is essentially that of an early chemical peritonitis with an associated acute transudate.

2. *Type of Operation to Be Performed.*—We feel that during the first eight-hour period the patient is usually well able to stand major gastric surgery if such be indicated. After this period surgeons agree that simple closure of the ulcer is the operation of choice.

There seems to be a growing tendency to do a routine simple closure even in the earlier period. With many of our patients so treated, the final results were most satisfactory. The rationale of such a procedure is evident when we consider the relative frequency of recurrence of ulcer symptoms after all types of gastric surgery. Is it not probably better surgical judgment to do the simplest procedure first and reserve the more radical surgery for a second attempt when the patient can be studied and prepared more carefully?

The chief indications for more radical surgery, such as pyloroplasty or gastro-enterostomy, are in those patients in whom simple closure might cause a pyloric obstruction, either immediate or remote. With our patients the pyloroplasty done in most instances included an excision of the ulcer. The closure was made usually with inverting double mattress sutures of fine chromic catgut, and the line of closure further reinforced with the gastrohepatic omentum.

The advocates of simple closure alone have much in their favor, for such a life-saving procedure can be done in a few minutes by even a novice in surgery, whereas an attempt to do the more radical operations might jeopardize the patient.

In our series there were sixty-seven simple closures, thirty-three pyloroplasties, and fifty-five gastro-enterostomies.

In this entire group of patients no intraperitoneal drainage was used. We are convinced that drainage of the abdominal cavity, at least in this type of peritonitis, is contraindicated and that the drain serves only as a foreign body which produces intra-abdominal adhesions. (We do, however, drain the abdominal wound routinely.)

Postoperative Treatment.—We have found that the satisfactory convalescence was aided if nothing was given by mouth for forty-eight hours; after that time an increasing diet was given, up to a modified Sippy type at the end of two weeks. During the first forty-eight hours glucose (10 per cent, given intravenously, and saline infusions maintained the fluid intake. During this same period a nasal tube apparently lessened the tendency to nausea and gastric dilatation. Upon discharge from the hospital these patients should be warned of the dangers of recurrence, and should be advised of the principles of prophylactic therapeutics.

Mortality and Cause of Death.—Probably in no other disease is early diagnosis and immediate surgical intervention so essential to a favorable prognosis.

In our series of 155 patients there was a gross mortality of 25 per cent. Of 117 patients who were operated upon within ten hours after perforation there were fifteen deaths or a gross mortality of 13 per cent. There were thirty-eight patients operated upon more than ten hours after onset of acute perforation, with a gross mortality of 64 per cent. This very significant increase of gross mortality from 13 to 64 per cent, of course, is the high mortality of delayed treatment.

The causes of death were as follows: peritonitis, 50 per cent; pneumonia, 20 per cent; cardiac disease, 30 per cent. The relative high mortality in this type of gastric surgery is in a large measure the result of such complications, which are so common among those patients who are in poor health from dissipation or disease.

CLINICAL RESULTS

We have been able to follow the postoperative course in 46 per cent of patients in this series and our results may be summarized as follows:

1. Eighty-five per cent of the patients reported themselves either entirely free of ulcer symptoms, or evidences of recurrences were promptly controlled by dietary measures.
2. The incidence of recurrence of ulcer symptoms was about the same after each type of operation performed. We do note, however, that simple closure of the recently developed acute ulcer generally effected a cure. Such a procedure with the more chronic callous ulcer, however, was not sufficient, and further medical or surgical care was the rule.
3. Those patients who reported a return of ulcer symptoms were almost invariably guilty of gross neglect of the various prophylactic measures outlined above.
4. The recurrence or persistence of ulcer symptoms is occasionally the result of multiple ulcers which were not searched for at the time of the emergency operation.
5. X-ray examination usually will show a persistent deformity of the duodenal cap after operations in this area, even though the patient is free of symptoms. Accordingly, proper evaluation of these findings is very essential in any follow-up studies of these patients.
6. We are convinced that the best ultimate results of any gastric surgery will be among those patients who receive the most careful medical supervision of their ulcer problem.

SUMMARY

1. The incidence and danger of perforation is a very important factor in the ulcer patient.

2. Acute perforation is most prevalent among those individuals who have improper management of their peptic ulcer problems.

3. A negative preoperative ulcer history is a very common observation.

4. An acute perforation was the first clinical evidence of the presence of a peptic ulcer in 20 per cent of the 155 patients reported in this series.

5. The clinical history, physical findings, and differential diagnosis are discussed.

6. Immediate laparotomy with closure of the perforation is the treatment of choice.

7. If operation is done within eight hours after perforation these patients are usually excellent surgical risks and major surgery is tolerated well.

8. If operation is done later than eight hours after perforation, simple closure alone is indicated.

9. Drainage of the abdominal cavity was not used in any operation of this series.

10. The mortality of this disease is essentially the mortality of delayed surgery with resultant peritonitis.

11. Follow-up records of the patients in this series show that with reasonable dietary care 85 per cent of satisfactory cures can be expected after all types of gastric surgery.

12. The type of the operation performed does not seem to influence the incidence of recurrence in comparable cases.

490 Post Street.

REFERENCES

1. Watson, John H.: Acute Perforating Duodenal and Gastric Ulcers, Brit. M. J. 2:169-173 (Aug.), 1930.

2. O'Hara, H.: Perforating or Corrosive Ulcer of the Duodenum, Tr. Path. Soc., Philadelphia, 6:37-38 (April), 1875.

3. Dean, Harry Percy: A Case of Perforation of a Chronic Ulcer of the Duodenum Successfully Treated by Excision, Brit. M. J., 1:1014-1015 (May), 1894.

4. Mayo, W. J.: Ulcer of the Stomach and Duodenum with Special Reference to the End-Results, Ann. Surg., 54:313-320 (Sept.), 1911.

5. Trout, James M.: Acute Perforation of Peptic Ulcer, Surg., Gynec. and Obst., 47:815-821 (Dec.), 1928.

6. Vaughan, Roger T., and Singer, Harry A.: Value of Radiology in the Diagnosis of Perforated Peptic Ulcer, Surg., Gynec. and Obst., 49:593-599 (Nov.), 1929.

7. Cope, Zachary: The Early Diagnosis of the Acute Abdomen. London. Humphrey Milford, Oxford University Press, 1927. Ed. IV. Pp. 91-106.

DISCUSSION

Burns Chaffee, M. D. (406 Professional Building, Long Beach).—The keynote of this paper is the importance of early diagnosis of acute perforated peptic ulcer. With all the accumulated knowledge we have of acute abdominal conditions, we have not lowered the death rate of these patients very materially. The chief reason is that early diagnosis is not made, or that the patient or the relatives will not coöperate with the attending doctor. Usually the diagnosis is not difficult. However, in questionable cases there should be no delay in sending them to the hospital where a flat roentgen-ray plate of the abdomen may be taken and a diagnosis thereby determined. Conservative surgery merits the best results. The essayists report gratifying results. Their percentage of cures is considerably higher than most writers', and I ascribe this to their conservative surgery, painstaking postoperative treatment and follow-up care. The latter is extremely important and not infrequently difficult to have carried out, as the greater percentage of this class of individuals are difficult to educate. The subject of drainage usually provokes discussion. The old version, "When in doubt, drain," is being replaced by a new version, "When in doubt, do not drain." Drainage in these cases is not a life saver and its use should be discouraged. Occasionally an abscess in the pelvis develops and in such cases the necessary drainage can be established.

John Homer Woolsey, M. D. (490 Post Street, San Francisco).—The profession is quite well educated to the recognition of symptoms and signs of a perforated peptic ulcer, but now and then delay in order to make an exact diagnosis jeopardizes the patient's chance of recovery. Many of such patients are too sick and suffering too severe pain to give reliable histories. An acute onset of severe pain and the rigid board-like abdomen are sufficient for a diagnosis of, first, an "acute surgical abdomen," and the more refined diagnosis will follow in 75 per cent of instances. A plain roentgen-ray with the patient in a sitting or standing position, as recommended by the authors, is worth while when in doubt. Do not let us delay when there is evidence of the "acute surgical abdomen." When in doubt give the patient the best chance of recovery, and that is direct inspection by laparotomy.

In this paper we are particularly interested in the types and results of treatment. The class of patients who fall to a free city emergency service are usually a malnourished type. Therefore the general resistance will run low and influence the authors' statistics, especially in those instances where operation was delayed to ten hours postrupture. However, I would heartily endorse what they recommend, single closure preferred; but if this is likely to give obstruction to the progress of the meal, then an accompanying gastrojejunostomy. In the acute perforation, characterized by a simple puncture and no accompanying visceral wall induration, simple closure by approximation and inversion as a rule is sufficient. In perforation of an old ulcer, then, the visceral wall induration closure may lead to too much intrusion upon the lumen, and then a gastrojejunostomy is in order. Any pyloroplasty (and the only one of certain enduring benefit is the Finney type) is as a rule contraindicated, for one should avoid fresh incisions in and through an inflamed area.

In the postoperative care I have never found that water in small sips, starting twelve hours postoperatively and in increasing amounts thereafter, has ever interfered with healing or been accompanied by any more likelihood of stasis. On the contrary, I believe this fluid by mouth has been of added comfort to the patient.

The authors' recommendation of nonperitoneal drainage is, in my opinion, wise, but I believe that, as a rule, drainage of the abdominal wound should be employed.

⁂

Thomas O. Burger, M. D. (1301 Medico-Dental Building, San Diego).—Ruptured duodenal ulcer is one of the very dramatic surgical conditions where prompt surgery, with very few exceptions, will save more lives than any other comparable intra-abdominal condition. Most of these cases are seen by the general practitioner first, and at the present time the majority of the profession are alert and members of our organization appreciate the urgency of this need of immediate surgery; but, as we know, there are a great many irregulars, nonmembers of medical organizations, religious, or other type that do not recognize or, if they do recognize, do not give these people the benefit that they deserve in the way of immediate attention. It is proved well in this paper, and in other discussions and statistics, that hours of delay means an increasing number of deaths, and the doctor who has the force and ability to persuade these patients or their family to an immediate operation is the benefactor. Fortunately the majority of these people are in such intense agony that they are easily persuaded to go to a hospital, when on other occasions they may be very difficult subjects to persuade. The doctor who repeats his hypodermic of morphin until he produces sufficient ease to allow these patients to go into this second stage or "phase," as it is described in this paper, often loses that golden opportunity of getting the patient at the opportune time.

Ruptures that are quickly protected by surrounding viscera or omentum and held from spreading are not of the outspoken, bold, clinical type that occurs in the vast majority, and their diagnosis is frequently very difficult from other intra-abdominal conditions. Occasionally extra-abdominal conditions as coronary occlusion may suggest very strongly a ruptured duodenal ulcer, but considering their infrequent occurrence and delay incident to diagnosis, this in ninety-odd per cent of the cases is hardly a question when board-like rigidity, shock, and agonizing epigastric pain are present.

Immediate exploration, closing the ulcer, unless there is a very decided induration of the visceral wall, by simply closing the ulcer and vulcanizing a patch of omentum thereon is all that is necessary in probably over 90 per cent of the cases, and intra-abdominal drainage is not usually indicated. Recurrence does occur, as perforation occurred the second time in a patient of mine, but that is a rare case.

Gastro-enterostomy or pyloroplasty has its indications, but in the vast majority of cases I think our reports and statistics show that the extra risk of surgery at this particular time, when all conditions are not so favorable, will be more fatal probably than that later fatality resulting by not doing the operation.

These patients should be followed up carefully, and if symptoms and roentgen-ray findings indicate the recurrence of an ulcer, then more radical surgery can be performed at a more opportune time.

I agree with the authors that spinal anesthesia is extremely desirable in this class of cases. The one disadvantage in rupture of some viscus in the lower abdomen on account of the low head position is not objectionable here because our trouble is in the upper abdomen. Cleansing of the peritoneum is much easier, the operation can be done more rapidly for the repair is easier, and in most instances is more desirable from every standpoint. Patients seen in the very late stages of peritonitis are a serious problem. Often, as has been stated so well in this paper, it is a chemical or a mechanical irritation peritonitis rather than of the septic type. By the institution of the customary treatment for peritonitis, *viz.*, Fowler's position, duodenal drainage, fluid balance, etc., until localization takes place, probably is as great a life-saving treatment as we know.

FRACTURES OF THE FOREARM*

A SIMPLE METHOD OF HANDLING BY MEANS OF WIRE TRACTION

By Samuel S. Mathews, M. D.
Los Angeles

Discussion *by H. W. Spiers, M.D., Los Angeles; Alfred Edward Gallant, M.D., Los Angeles; Douglas D. Toffelmier, M.D., Oakland.*

The purpose of this paper is to present a simple and efficient method of handling difficult fractures of the forearm, meeting the two constant requirements in the treatment of any fracture—good reduction and uninterrupted fixation until bony union takes place. By difficult fractures, I mean compound fractures and those cases which cannot be treated successfully by the ordinary, conservative means of handling fractures of the forearm.

METHOD OF PROCEDURE

The procedure is carried out under a general anesthesia in the operating room, and the same precautions are observed as in any major operation. The lower third of the arm and entire forearm, including the fingers, are prepared in

---

* Read before the Industrial Medicine and Surgery Section of the California Medical Association at the sixty-first annual session, Pasadena, May 2-5, 1932.

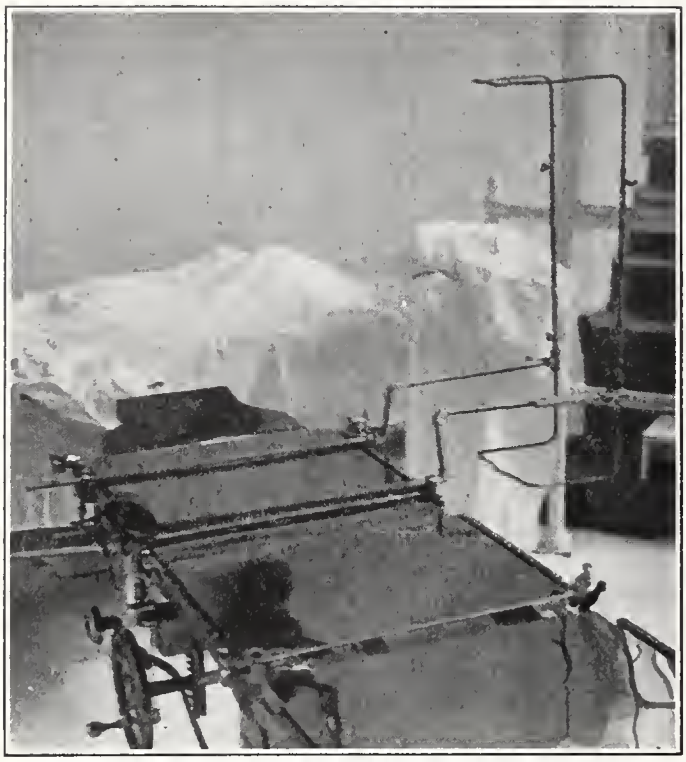


Fig. 1.—Simple frame used for the reduction of forearm fractures. The forearm is suspended between the over- and underhanging cross rods.

the usual manner, with ether, alcohol, and iodin. A small steel wire, 26 gauge piano wire (.01594 inch in diameter), is introduced through both the ulna and radius, without previously incising the skin, one-half inch below the styloid process by means of a specially constructed hand brace. The wire is started on the ulnar side, in view of the fact that the ulnar styloid lies below that of the radius, thus insuring passage of the wire through both bones, and also that it will lie below the ulnar notch of the radius. In a similar manner, wire of the same gauge is inserted through the olecranon. With the wires in place, alcoholic dressings are applied and are held in place by sterile bandage. A U-shaped compressible steel clamp is then applied to both wires for the purpose of keeping them taut. The arm is then brought out to right angle abduction and flexed at the elbow. With the lower clamp tied to a fixed object, overhead traction is then applied.

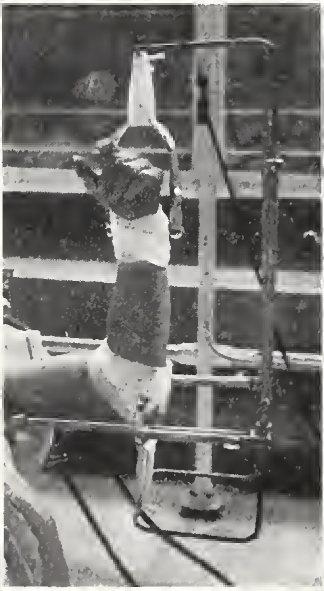


Fig. 2

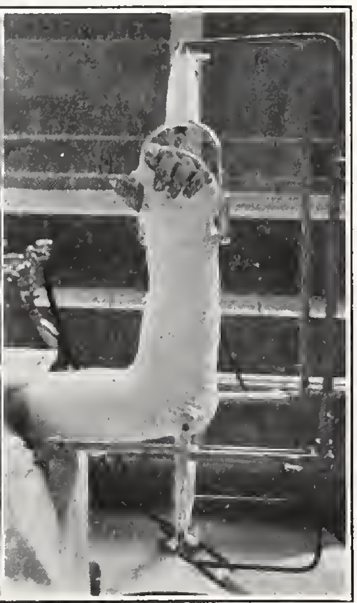


Fig. 3

Fig. 2.—The forearm fracture, reduced by raising upper cross-bar and resetting set screws, thus exerting pull on upper wire pin.

Fig. 3.—Plaster cast, applied without disturbing position.

We have worked out a very convenient frame for the purpose of obtaining this traction. It consists of two pieces of one-fourth inch pipe which are clamped across the table under the patient and extend out on either side of the abducted arm beyond the elbow. Each piece is provided with an upright member. Cross rods, which are bent at right angles, are slipped into both the upper and lower ends of the uprights and are fixed into position by set screws.

The forearm is suspended between the under and overhanging cross rods. By merely raising the upper or lowering the lower cross rods and resetting the set screws, traction can be exerted. By means of a portable x-ray unit or lateral and anteroposterior x-ray pictures, the fragments can be easily manipulated into position. The sterile bandages, holding the alcoholic dressings in place, are cut and a plaster cast is then applied from the mid-forearm down to mid-palm without disturbing the position of the arm. The wire pins are incorporated in the plaster, thus preventing the slipping back of the fragments. As soon as the plaster becomes hard the U-clamps are removed and the protruding pieces of wire are cut off about one-fourth inch from the plaster and the ends covered by a few rolls of plaster bandage. Immobilization is continued until there is sufficient amount of bony callus to prevent a possible displacement of the fragments.

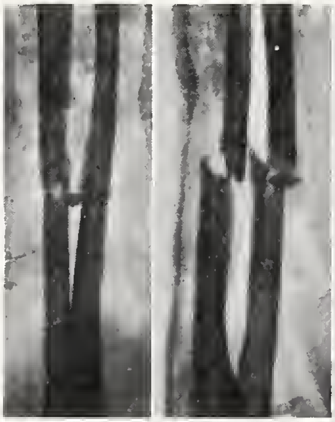


Fig. 4a.—Before reduction.

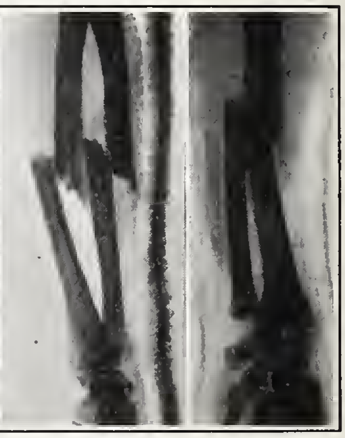


Fig. 4b.—After reduction.

When x-rays show that we have enough bony callus to make sure that the fragments will remain in place, the cast is removed. One end of each wire is cut close to the skin edge by means of ordinary wire cutters. The wounds are thoroughly cleaned with alcohol and iodin. The wires are then withdrawn from the opposite side. A new cast is then applied.

DIFFICULTIES IN TREATMENT

Fractures of one or both bones of the forearm above the wrist are affected by all the surrounding

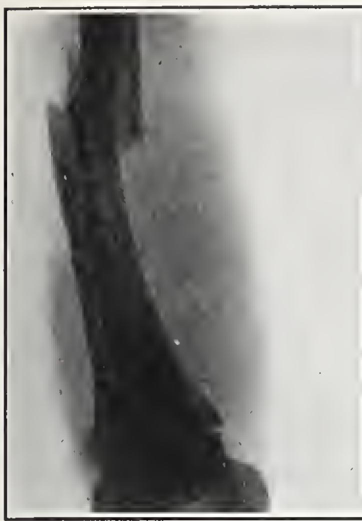


Fig. 5a.—Lateral view before reduction.

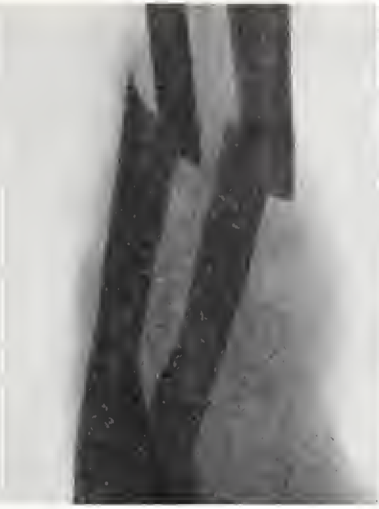


Fig. 5b.—Anteroposterior view before reduction.

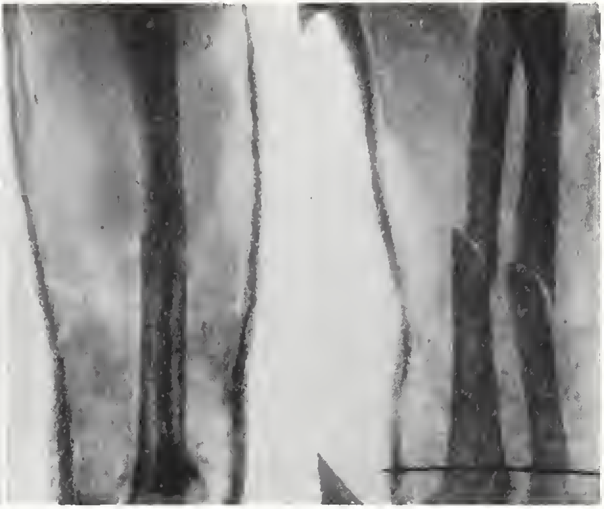


Fig. 5c.—After reduction.

muscles, as far as longitudinal traction is concerned, but ordinarily it is not the over-riding of the fragments that gives us our difficulty. It is the rotation of the fragments due to the action of the pronators and supinators which makes this type of fracture not only difficult to reduce but also difficult to maintain in reduction by the ordinary means of fixation. We classify such fractures in reference to the insertion of the pronator teres. Fractures below the insertion must occur between the pronator teres and the pronator quadratus, which runs almost transversely across the lower end of both the radius and the ulna. In such fractures, the distal fragments are drawn together, due to the action of the pronator quadratus, assisted by the brachioradialis, which is inserted on the styloid process of the radius and tends to tip the radius toward the ulna. The upper fragments tend to go into position of supination through the action of the biceps, assisted by the supinator brevis, but this is opposed by the pronator teres, which also tends to approximate the upper fragments.

In fractures above the pronator teres, both the pronators are attached to the lower fragment. The pronator quadratus tends to draw the upper end of the lower fragment together, assisted by the brachioradialis. The pronator teres tends to pull the lower fragment into pronation and also pull it toward the ulna. The upper fragment is affected by the biceps and the supinator brevis, whose action is to rotate the upper fragment into supination and flexion, so that the upper fragment is usually anterior to the lower fragment. It is this type of fracture which offers a far more difficult problem, and, as said before, is not only hard to reduce but also hard to hold in reduction by our ordinary methods of handling the forearm.

COMMENTS ON OTHER TREATMENTS

Conservative treatment of these difficult fractures, in this country up to the present time, has varied with the individual operator, and the results have not been particularly encouraging. In most instances, open reduction, with internal fixation, is carried out. In Wilson and Cochran's

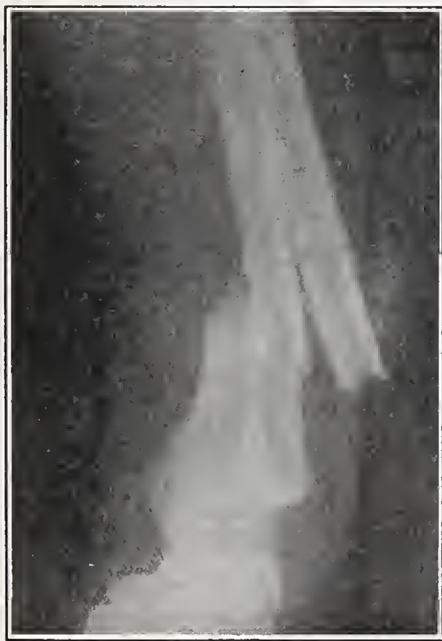


Fig. 6a.—Lateral view before reduction (comp.).

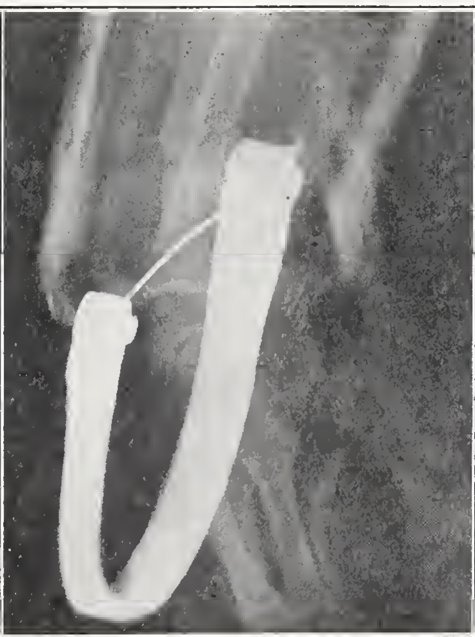


Fig. 6b.—Lateral view after reduction.

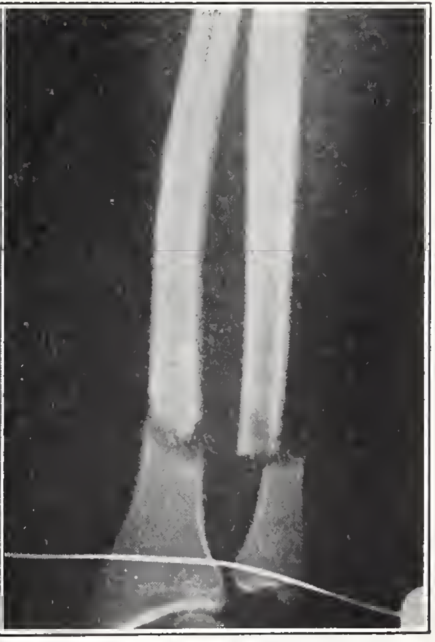


Fig. 6c.—Anteroposterior view after reduction.

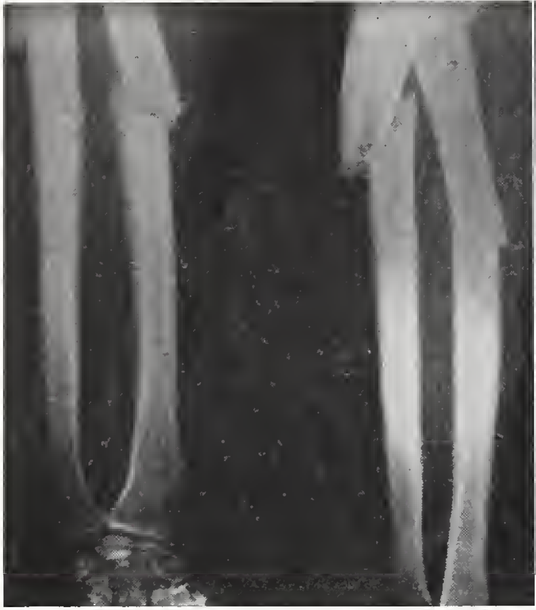


Fig. 7a. — Anteroposterior and lateral view before reduction.

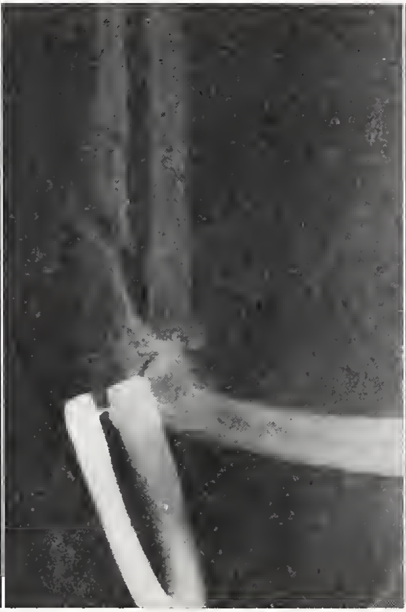


Fig. 7b.—Lateral view after reduction.

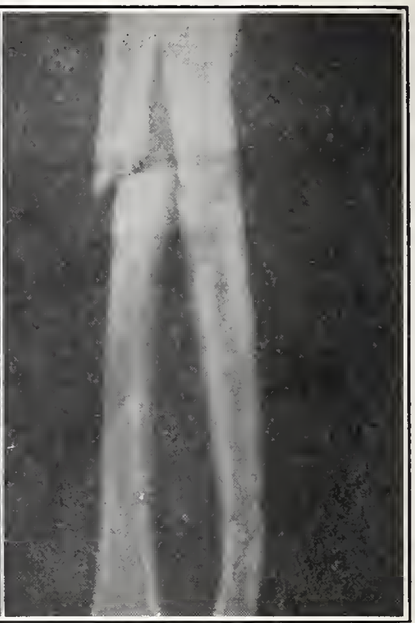


Fig. 7c.—Anteroposterior view after reduction.

book on fractures and dislocation, we find under the heading of fractures of both bones of the forearm with displacement, the following:

> "Unfortunately, traction methods, although valuable, cannot be depended upon to the same degree for the correction of deformity, as in fractures elsewhere, and skeletal traction in the region of the wrist is scarcely advisable. For these reasons, and because of slight risk to the patient involved by the operation itself, open reduction is more frequently resorted to than in case of many other fractures. Such procedure is justifiable in the hands of a well-equipped surgeon with meticulous technique and large experience in the operative treatment of fractures, but under other auspices is likely, sooner or later, to result in disaster."

These authors no doubt have reference to the large, rigid pin when they advise against skeletal traction in the region of the wrist.

In the bulletin of the American College of Surgeons, on the principle and outline of fracture, one may read:

> "If over-riding cannot be overcome and satisfactory reduction obtained, the patient should be referred to a competent surgeon."

Dr. Willis Campbell states in his book on orthopedic surgery that if manual reduction is impossible, an open reduction is indicated. Suspension of the arm from an overhead frame is, at times, of value in securing the reduction of fractures of both bones, in his opinion.

METHOD PREFERRED

In other words, our treatment for such fractures has been open operation if reduction is impossible to attain. We feel that with the aid of the wire pin used as a means of direct traction on the fragments, in a manner similar to that described by Böhler in his recent book on the treatment of fractures, reduction can be carried out. We are able to overcome the great difficulty in handling these fractures, that is, overcome the existing deformities resulting from muscle pull, all of which can be carried out with the minimum amount of trauma. With the pin passing through the lower fragments, the action of the pronator teres to approximate the lower fragments is overcome and the normal interrosseus space is secured. The over-riding deformity, due to the longitudinal pull of the surrounding muscles, is easily overcome by straight traction. By merely rotating the hand, with the elbow flexed, any rotation deformity and anterior displacement of the upper fragment, due to the action of the biceps, can be easily corrected. With the fragments in place and the cast applied, incorporating the pin, we have the fragments fixed in such a way that there can be absolutely no displacement of fragments due to muscle pull. If we are dealing with a compound fracture, the reduction can be carried out with practically no further injury to the involved area. In treating such fractures, it is advisable to first do a complete debridement of the wound and then insert the pins. If there has been extensive laceration of the soft parts so that the skin edges cannot be approximated and further dressings are indicated, this can be carried out easily by merely cutting a window in the cast and in no way increase the possibility of losing our position. With this method we also overcome the possibility of an existing infection in the wound working its way down the muscle planes, which is apt to happen in treating these cases with overhead traction. During the period of convalescence the patient is extremely comfortable and can be easily followed in the out-patient clinic or any office, thus reducing the period of hospitalization.

In cases thus treated in the orthopedic service of Los Angeles General Hospital, where this work was carried out, at no time have we failed to get satisfactory reduction, and we have been able to maintain that reduction throughout the course of healing. In some instances the patient has been referred home after the third or fourth day following the reduction and treated thereafter in our out-patient clinic.

CONCLUSIONS

The use of the wire-pin traction is the most effective way of handling difficult fractures of the forearm because:

1. It gives us direct traction on the fragments;
2. It permits manipulation with a minimum amount of trauma;
3. It permits dressings in compound fractures without disturbing the fragments; and
4. It prevents malposition after reduction has been obtained.

1930 Wilshire Boulevard.

DISCUSSION

H. W. Spiers, M. D. (614 Westlake Professional Building, Los Angeles).—Doctor Mathews has brought to our attention Böhler's ingenious and thoroughly sound method of handling difficult fractures of the forearm. It follows his cardinal principles in the reduction of fractures, *i. e.*, fractures should be reduced by traction and countertraction, the distal fragment should be placed in line with the proximal fragment, and immobilization should be complete until firm union has taken place. The major difficulty in the handling of fractures in this region has been in following out the first fundamental principle. The method presented maintains traction and countertraction readily, it automatically corrects alignment, and immobilizes by incorporating the skeletal traction in plaster.

The development of the piano-wire traction has made this form of skeletal traction in the smaller bones practicable. His spring steel traction collar is one of many developed recently, to produce the lateral tension necessary on the piano wire. It is efficient. I have used it with great satisfaction.

It is my opinion that those who will study and acquaint themselves with skeletal traction in the handling of the difficult fractures of the forearm will find a distinct and positive advantage in its use.

⁂

Alfred Edward Gallant, M. D. (727 West Seventh Street, Los Angeles).—Doctor Mathews' paper is interesting from several standpoints because it offers a method of handling difficult fractures such as one encounters in the supracondylar region, either the comminuted or compound type in fractures of the acetabulum, where the head has been driven into the acetabulum, or such fractures where there is a distortion of part of the pelvic ring.

We have had a few cases of fractures of the ulna and radius which offered difficult reductions and were successfully treated by the application of piano-wire traction. We have had two fractures of the lower end of the humerus, one of which was compounded, and portions of the bone were lost at the time of the compounding. Such a fracture would offer a very difficult problem, from a conservative viewpoint, and it would be practically an impossibility to treat it without skeletal traction. However, with piano wire through the ulna, below the olecranon, and the incorporation of mechanical traction in a plaster spica, the result has been very gratifying, function having been returned to the elbow, although the original elbow joint had been badly damaged. The second case, a comminuted fracture of the humerus with considerable distortion of the fragments, in a woman about fifty-five years of age, was successfully and efficiently treated in the same manner, by piano-wire traction. We have found it very satisfactory to use piano wire with mechanical traction in fractures of the acetabulum, the mechanical traction being incorporated in the plaster spica, the piano wire and the spring loop being attached to the greater trochanter. The possibility of osteomyelitis with this method is greatly minimized as compared to the use of the Steinman nail, where there has been any extensive laceration and congestion of tissues which might lead to this unfortunate complication.

I quite agree with Doctor Mathews and his reference to Dr. Willis Campbell's remark that when conservative methods fail, skeletal traction of this type is of great value.

Douglas D. Toffelmier, M. D. (367 Hawthorne Avenue, Oakland).—The treatment of forearm fractures with wires or heavier steel pins as a means of traction and fixation did not originate, unfortunately, in America. It has been used for several years in Europe by such men as Beck of Kiel, Böhler of Vienna, and Kirchner of Tubingen. The evolution of Böhler's method, as described in his present book, consisted of the following steps: First, manual traction of the forearm with countertraction above the elbow, flexed to 90 degrees, and the application of a nonpadded cast well moulded about the wrist and elbow to prevent shortening or rotation of the fragments. Second, the same type of traction for reduction with the insertion of a round wooden peg in the plaster on the volar and dorsal aspects of the forearm, which were pressed into the interosseus space to prevent the narrowing mentioned in this paper. This method was a great improvement over previous methods, but still did not answer in certain difficult fractures. Lastly, a manual reduction, and, while the traction was maintained, an insertion of two Beck wires (2 millimeters thick), and the application of the cast as described by Doctor Mathews. I use this last method of Böhler's frequently, and find it simple and very efficient. It differs from the method of Doctor Mathews only in that the reduction is made first, and the wires are inserted secondarily to act as two fixed points in the maintenance of the position of the bones. When Doctor Mathews is dealing with a forearm fracture in which the proximal or distal fragments have rotated on their longitudinal axes, the insertion of his wires before that deformity is corrected will prevent these fragments from returning to their original position. If Böhler's method of manual traction is followed closely, with the hand halfway between supination and pronation, and the elbow at a 90-degree angle, all the muscles involved will be on equal tension, and the fragments will almost always correct themselves sufficiently to insure an excellent functional result. If still more traction is necessary to overcome the shortening, the wires can be inserted and more traction can be applied by the use of Doctor Mathews' compressible U clamps only after the major deformities have been reduced.

I quite agree with Doctor Mathews that those methods of treating forearm fractures, described in American textbooks, are very frequently inadequate. I do not believe, however, that the major problem has been in the reduction, but rather in the maintenance of the reduction. Further I believe that the wires should not be inserted until the major deformities have been reduced. Wires inserted first and then used as a means of traction may become an obstacle in the reduction of the rotation and interosseus narrowing deformities.

CORNEAL ULCER—ITS TREATMENT*

By Harold F. Whalman, M. D.
Los Angeles

Discussion *by William A. Boyce, M. D., Los Angeles; M. F. Weymann, M. D., Los Angeles; Roderic O'Connor, M. D., Oakland.*

A condition which may cause a greater or lesser impairment of vision, unsightly scars upon a very conspicuous and expressive organ of the body and even entire destruction of that organ, is one which calls for the most expedient therapeutic measures at our command.

ETIOLOGIC FACTORS

Corneal ulcers in general are the result of the invasion of bacterial organisms into a vulnerable area in the cornea. Such an area may result from an abrasion, a foreign body embedded in the cornea, a penetrating injury, or chemical burns. It may arise from the necrosis of phlyctenules or deeper infiltrates, the breaking down of a dense scar under the influence of toxins and remote from adequate nutrition, such as the atheromatous ulcer in the infiltrated margins of pannus, and in cases of severe purulent conjunctivitis such as gonorrheal ophthalmia where corneal necrosis sometimes occurs.

---

* Read before the Eye, Ear, Nose and Throat Section of the California Medical Association at the sixty-first annual session, Pasadena, May 2–5, 1932.

Without taking up the special characteristics of each kind of corneal ulcer, we have in all cases a break in the continuity of the corneal epithelium with necrosis where the toxins of invading bacteria have destroyed native cells and their defenders, the leukocytes. Just beyond this, wandering cells fill the lymph spaces in all available channels, while new lines of communication in the form of loops of superficial vessels come in from the limbus and penetrate to the base of the ulcer.

OBJECT OF TREATMENT MEASURES

The first consideration in treatment is to survey the area involved and the frontier of advance by the instillation of a two per cent aqueous solution of fluorescein, which stains the denuded area and the necrotic margin of the ulcer. A few minutes should be allowed for penetration of the fluorescein into the border of the ulcer where the bright ring of staining indicates the limit of necrosis. If one has a slit lamp available, much can be learned regarding the depth of the ulcer by means of direct focal illumination with the narrow beam, giving an optical section of the cornea. The advancing border, as well, can be more efficiently studied by this means, and this is particularly true of the dendritic ulcer, where fine filaments of invasion can be picked up with the slit lamp. However, this refinement of technique need not challenge one's powers of observation with the magnification afforded by a simple hand lens.

Approaching next a plan of treatment, the selection of a local antiseptic to produce as complete asepsis as possible is necessary. One of the most commonly used is the mild silver protein. As a germicide its efficacy may be questioned, but it is of value in producing asepsis by virtue of its property of precipitation of mucus in the conjunctival sac. The coagulum thus formed may then be washed out, leaving a clean mucous membrane for the action of other antiseptics. While its frequent, prolonged use must be guarded against on account of the argyrosis that results, it can be used to good advantage when it is necessary to clear the conjunctival sac of detritus.

Optochin, or ethyl hydrocuprein has proved to be of specific value in ulcus serpens and should be used frequently in one per cent solution in these cases.

Zinc sulphate in one-fourth to one-half of one per cent solution is of value where a mild stimulating effect is desired.

A great variety of other antiseptics may be mentioned, such as metaphen in 1 to 5000 dilution; 1 per cent aqueous solution of mercurochrome; mercury oxycyanid, 1 to 5000; and hexylresorcinol, 1 to 2500; all of which are effective and convenient to use by instillation or as a wash.

The ulcerated area requires direct treatment, which may be accomplished by several means. Chemicals are used, and to this end iodin may be employed in early cases by making a syrupy solution of equal parts of tincture of iodin and glycerin, and adding ten drops of this to ten grains of iodin crystals. This may be applied with an applicator made of cotton wrapped tightly upon the end of a toothpick and the end cut off bluntly with scissors. The solution is applied to the floor of the ulcer and well into the necrotic edge. In a similar way, trichloracetic acid may be employed by using the crystals in a deliquescent state with the same type of applicator, or with the blunt end of a toothpick. Trichloracetic acid is very effective and can be accurately applied, as the tissue contacted immediately turns white as the acid becomes fixed, and there is not the tendency to creep on further into the tissues. It can be applied with safety to ulcers of any size or depth.

Heat Cauterization.—Cauterization by means of heat may be accomplished in a very simple way with an implement of suitable-sized tip, such as a probe or strabismus hook, touching the infiltrated margin of the ulcer with the tip, which has been heated to cherry red with flame. The same may be done with the galvanocautery. Such methods of heat cautery are not controlled and uniformity of temperature is not obtained. A better means has been devised for the application of heat which can be regulated to within one degree of the temperature desired. This is obtained with the Shahan thermophore, which insures uniformity of application by virtue of a set of applicators of varying size and shape, as well as uniformity of temperature controlled by a thumb-screw thermostat. The instrument is used by selecting an applicator of sufficient size to overlap the necrotic margin of the ulcer, adjusting the thermostat to secure the desired temperature, and then applying directly against the lesion with sufficient pressure to dent the cornea. A temperature of 150 to 160 degrees is selected for progressive infected ulcers, such as ulcus serpens, and applied for one minute. For dendritic and other indolent ulcers, a temperature of 135 to 140 degrees for one minute will usually suffice. In treating marginal ulcers arising as the result of the breakdown of deep-seated infiltrations, the author has found the use of the thermophore at 145 degrees for one minute particularly efficacious. A second application may be required in some instances.

Ionization.—In the experience of some men, such conditions as ulcus serpens, dendritic ulcers, and herpetic ulcers have responded well to treatment by iontophoresis. This treatment is accomplished by the ionization of a salt such as zinc sulphate in one-half of one per cent solution, the anode being applied to the eye and the cathode to the cheek, and a galvanic current of two milliamperes used. This method has the advantage of leaving less scar.

Ultra-Violet Light.—For a number of years ophthalmologists, and particularly Duke-Elder, have used ultra-violet light in the treatment of corneal ulcer. Administration by the mercury vapor arc or the carbon arc lamps result in rapid healing, leaving a thin scar. The method requires special apparatus, but has much in its favor in the resultant thinner scar formation; and no other treatment of the ulcerated area is required.

Protein Therapy.—A widely applicable, and very efficacious means available to all, is the use of nonspecific protein therapy. Boiled milk or lactigen may be used intramuscularly in quantities of eight to ten cubic centimeters for the average adult, repeated several times if necessary. Typhoid vaccine, 25,000,000 organisms, may be given intramuscularly or intravenously in accordance with the Howard method. Mixed respiratory vaccine, commencing with four minims, may be given subcutaneously or intramuscularly, doubling the dose in three days, and redoubling in another three days. Nonspecific protein therapy should always be given at once in cases of ulcus serpens and gonorrheal ulcer. The author prefers lactigen intramuscularly or typhoid vaccine intravenously, as the dose can be more accurately measured than milk. Milk is an uncertain quantity, as its efficacy varies directly as the bacterial count.

Surgical Procedures.—A number of surgical procedures are valuable adjuncts to the treatment of corneal ulcer. The simplest instrumentation is the removal of the necrotic base and margin of any penetrating ulcer by curettage. This will frequently hasten the repair of an indolent ulcer which is slow in healing. If an ulceration has penetrated deep into the stroma until finally Descemet's membrane can be seen as a glistening point, one should not hesitate to perform a paracentesis. The release of tension will often prevent perforation of the cornea, and its extremely unpleasant sequelae, incarceration of the iris. Paracentesis should also be done very early if hypopyon exists, the exchange of fluids in either case being beneficial.

Where large areas are involved, flaps of conjunctiva should be prepared and placed over the area. The author prefers a complete purse-string flap, as it affords the most complete protection and nourishment for the cornea. Sanford Gifford advises this procedure even in the presence of a purulent discharge, when the cornea becomes involved in gonorrheal ophthalmia.

Other Measures.—A few words about adjuvant measures. Atropin is indicated in secondary iritis, as well as for the relief of ciliary spasm, and always where perforation is imminent. For the comfort of the patient, ointments are of value in preventing irritation and erosion of the ulcer margins. All procedures requiring much manipulation and all applications to the cornea must be preceded by thorough cocainization with four per cent cocain. The possibility of an infected tear sac must not be overlooked. In recurrent ulcers remote foci of infection should be searched and close attention paid to constitutional treatment.

SUMMARY

All corneal ulcers should be carefully studied as to area depth and progress by staining with fluorescein and observing under magnification. The slit lamp is a valuable aid.

Antiseptics are more effective if conjunctival sac is first cleansed by mild silver protein which forms a coagulum of the detritus which can then be evacuated by irrigation.

Cauterization of ulcers by means of trichloracetic acid is perhaps the most generally applicable of the chemical agents and leaves a relatively thin scar.

The Shahan thermophore is the most accurate means of applying heat of a known temperature for cauterization of ulcers, and is particularly valuable in ulcus serpens, dendritic ulcer, and certain indolent ulcers.

Phototherapy offers some distinct advantages in requiring less manipulation and causing less pain and less scarring.

Nonspecific protein therapy is a distinctly beneficial adjuvant to treatment, and should always be given in cases of ulcus serpens and gonorrheal ulcer. Milk is less constant in its action than typhoid vaccine, lactigen, or mixed respiratory vaccine.

Certain surgical measures are of value, such as paracentesis, when perforation is imminent, and use of the sliding conjunctival flap when large areas are involved, as well as for impending perforation.

Foci of infection must be eliminated and constitutional causes must be sought and treated in cases of recurrent ulcer.

727 West Seventh Street.

DISCUSSION

William A. Boyce, M. D. (727 West Seventh Street, Los Angeles).—I realize the difficulty in attempting to discuss the broad subject of corneal ulcers in one paper in a given time as allowed by this section. Doctor Whalman is to be complimented on the thoroughness with which he has covered the ground in the time allotted to him.

The subject of corneal ulcers should be divided into prevention, cause, and treatment.

Gifford thinks that 80 per cent of corneal ulcers can be prevented by attention to two things: removal of foreign bodies, and cure of chronic infections of the lacrimal sac. Certainly a great many ulcerations of the cornea from a gonorrhea ophthalmia can be prevented by the early use of foreign proteins and keeping the pus out of the saucer as formed by the edematous conjunctiva.

It is necessary to find the cause of a corneal ulcer before it can be intelligently treated, and the cause, if possible, must be removed. As an illustration, a dendritic ulcer is due to an involvement of the cornea with the virus of herpes simplex, and on account of the anesthesia of the cornea and the accompanying disturbances of nutrition the eye should be kept constantly closed. Protein injections in these cases should be avoided, as the use of typhoid vaccine has been known to cause the condition. Many ulcers require no treatment other than the removal of the focus of infection; for instance, a phyctenular keratitis which is generally considered to be tuberculous. Other forms of tuberculous keratitis at times break down and ulcerate. It is obvious that constitutional treatment must be applied before results can be expected.

I do not believe that Doctor Whalman intends to convey to you that opening the anterior chamber is harmless. In my opinion, this is a bad procedure except in extreme cases; I do not believe it accomplishes much, if any, good. It is a well-known fact that an anterior chamber emptied by a paracentesis refills in a very few minutes; that a hypopyon contains no microörganisms and is what is considered laudable pus; and that the pus does not come from the ulcer, but is secreted by the ciliary body and indicates that there has been an iridocyclitis as the result of the ulcer.

I believe that in the majority of cases better results are secured by allowing a deep and bulging ulcer to rupture of its own accord; or, if it is thought best to rupture it, to do so with a cautery puncture. This wound will stay open for several days, lowering the tension in the anterior chamber.

Foreign proteins have a place in the treatment of sluggish ulcers, but too much dependence must not be placed upon them and they must be intelligently used and with caution.

Treatment. After due consideration of the cause, and that factor eliminated if possible, we are to consider the local treatment. The so-called antiseptics dropped into the conjunctival sac are of questionable value and too much reliance cannot be placed upon them.

Atropin should be used in every case.

After thoroughly anesthetizing the eye with some anesthetic other than cocain, the slough should be thoroughly removed and a thorough application of the cauterizing agent of choice—whether it be tincture of iodin, carbolic acid, or trichloracetic acid—should be made wherever there is any stain. Then ten grains of aspirin should be given to control the after-pain, an ointment of some kind instilled, and the eye closed and kept closed. Ice applications should be used in preference to heat. This should be repeated every day or every second day. If after a reasonable time no progress is made and the ulcer cannot be controlled, then it is time to consider foreign proteins and the thermaphore. Theoretically it looks simple to give a foreign protein or use the thermophore, but in private practice practically all ulcer cases are office cases, seldom hospitalized. Both procedures can be practiced in the office, but not so conveniently; private patients do not like either. I am very much in favor of both when necessary.

Optochin dropped in the conjunctival sac is painful and its value doubtful unless it is applied direct to the ulcer. The actual cautery is seldom used. At present the thermaphore is preferable.

⁂

M. F. Weymann, M. D. (2007 Wilshire Boulevard, Los Angeles).—Biomicroscopy is of inestimable value in determining the seriousness of the corneal lesion. Epithelial edema, swelling of the stroma, folds in Descemet's membrane, and precipitates on the posterior surface of the cornea indicate, in order, increasing severity of involvement. It is true that the exudate of hypopyon is from the ciliary body and sterile, but biomicroscopy reveals that in these cases the albumen content of the aqueous has become so high as to cause a cessation of the normal circulation of the aqueous by convection. Thus it seems reasonable to suppose that paracentesis would be beneficial, for the cause of the stasis is removed and the corneal endothelium is permitted to be again bathed in a circulating fluid.

In the treatment of corneal ulcer, let us also not forget to treat the patient. He must first of all be relieved of his pain so that nature may be undisturbed in building up his resistance. When local measures fail to do this, the administration of the coal-tar analgesics at regular intervals will accomplish wonders. Too often these patients are allowed to carry on their regular work with the protection of only a pair of tinted lenses when they should be impressed with the fact that the eye is part of the body that is ailing, and that complete rest or lessened activity is necessary to obtain as rapid a cure as is possible.

Elimination of foci of infection is desirable from the standpoint of building up the patient's resistance, whether the ulcer is specifically due to absorption from a focus or not. It has usually proved desirable, in my experience, to initiate the treatment of these patients with a thorough cleansing of the intestinal tract by means of calomel, followed with the usual saline cathartic on the ensuing day. The patient will also be grateful for specific advice as to a sensible diet, abstinence from alcohol, and general hygienic measures.

Too frequently the local treatment of corneal ulcers is overdone. Excessive chemical disinfection or cauterization, particularly of noninfected ulcers, will slow the healing process and increase the period of disability. Before an ulcer can be expected to heal, we must eliminate possible local irritation in the conjunctiva which may be the source of the corneal disturbance. Not infrequently calcified or caseous particles in the conjunctival crypts or Meibomian glands of the upper lid prevent a corneal ulcer from healing. Treatment of an inflamed conjunctiva may be the means of curing an ulcer without direct applications to the cornea.

In the trophic and uninfected ulcers of the cornea, an occlusion dressing with atropin and novoform ointment may be all the local therapy required. I wish particularly to emphasize the necessity for early occlusion of a cornea afflicted with herpes, as a severe ulcer may be avoided by this treatment.

My views as to the administration of foreign protein in infected ulcers are thoroughly in accord with those of Doctor Whalman. The use of the thermophore of Shahan has been described, and when other measures fail, its application practically always effects a cure when intelligently managed.

You will pardon my presumption in calling attention to the simpler and more elementary measures in the treatment of corneal ulcer, but I fear that we frequently become so absorbed in local and intricate forms of therapy that the basic principles of treating the patient are overlooked. We should be grateful to Doctor Whalman for the practical manner in which he has presented the treatment of a condition which so commonly confronts and baffles us.

⁂

Roderic O'Connor, M. D. (1904 Franklin Street, Oakland).—Inasmuch as I am the third discussant, but little is left except to give my ideas on certain points mentioned by the other two and by the author. I am a firm believer in the actual cautery (Prince) early in all infected ulcers, and am frequently sorry when, for any reason, its use is delayed. Also I feel that the sooner a worthwhile procedure is used the better. In this connection, I have recently had a corneal ulcer that refused to heal under ordinary treatment. It healed in four days after a 100,000,000 dose of antityphoid vaccine. I feel certain that something more than coincidence entered into the cure and that its use was unduly delayed.

As to ulcers threatening to rupture: I think a tiny cautery puncture preferable to spontaneous rupture. It can be made so small that the desired leakage is secured and yet without loss of the anterior chamber.

As to hypopyon: If one is left too long it may organize and form a permanent opacity. It should be removed by puncture and drainage in time to prevent such an occurrence.

I can see no objection to giving an antityphoid vaccine in the office, nor in the use of the cautery or its substitute, the thermophore.

I do not believe that the opinions of a patient as to what he likes or dislikes should enter into the treatment, as mentioned by Doctor Boyce. A patient has no right to direct the treatment and expect the medical attendant to assume the responsibility. So when patients refuse to permit me to do what I feel is necessary, I ask them to kiss me good-bye—figuratively speaking of course.

⁂

Doctor Whalman, (Closing).—Certain points in the discussion indicate a difference of opinion regarding some procedures. Doctor Boyce's advice against the use of cocain as an anesthetic is well taken, as cocain has a drying effect upon the corneal epithelium which may reduce its resistance, and another anesthetic such as five per cent butyn may be well substituted. I use vaccines and the thermophore in my office without serious complaint at the time, and generally am rewarded by praise when results are quickly obtained. I use the vaccines almost invariably, choosing the mixed respiratory vaccine to be given subcutaneously or intramuscularly. I reserve the typhoid vaccine for intravenous use and, of course, the reaction is so pronounced when given by this route that it should not be done in one's office, but at the hospital or patient's home. I agree with Doctor O'Connor—use efficacious measures early.

SYPHILITIC PNEUMONIA*

By Harvey T. Olsan, M. D.
and
Stanley O. Chambers, M. D.
Los Angeles

Discussion *by H. W. Stephens, M. D., San Francisco; Norman Epstein, M. D., San Francisco; Barclay E. Noble, M. D., Los Angeles.*

SYPHILIS of the lung, according to present standards, is commonly regarded as a tertiary manifestation of the disease, associated with its later stages. The term in itself seems to suggest gummata, chronic interstitial pneumonias, and eventual fibroses. That an acute and early syphilis of the lung does exist and may prove relatively common, has but rarely been considered in the somewhat turbulent literature of the subject.

HISTORICAL

The first description of syphilis of the lung has been variously ascribed to Paracelsus, Paré, Laennec, Morgagni, Coesalpinus, Pinctor, and to many lesser luminaries. The earliest anatomical description is commonly accepted as that of de Paul[5] in 1850, discussing syphilitic pneumonia of the new-born. Porter[22] was the first American to write upon the subject.

During the sixteenth, seventeenth, and eighteenth centuries the diagnosis of "phthisis a lué venerea" seems to have been fairly common until the discovery of the tubercle bacillus by Robert Koch. In its stead arose a great wave of skepticism. There was a general house-cleaning of museums; material taken from syphilitic patients was subjected to careful reconsideration; and specimens found under the label of pulmonary syphilis were again scrutinized. The literature that followed this renaissance did indeed seem to indicate a decided dearth of accepted and indisputable cases. The criteria, of course, were those commonly prevalent at that time.

Claytor,[4] for example, found no cases in 13,000 autopsies. In 1895, there were but ten accepted and labeled cases in all the collections in London.[3] Babcock[3] found but two in 6,000 autopsies in Chicago. Kolisko[3] observed but 100 in many thousands of autopsies in Vienna. Carlier[2] up to 1882 was able to collect but twenty cases in all, and Hiller[10] could add but eight more in the succeeding two years. Downing[7] found none in 3,000 autopsies at the Massachusetts General Hospital. Dorsey found none in several hundred postmortems;[3] Symmers[28] found two in 314 syphilitics; Stanley[26] found two in 1,000 cases; and Massia[3] but two in 6,000.

In contrast with this seeming rarity of the disease, however, stand the reports of Chiari,[3] who found one case in only 98 autopsies; Osler,[20] who found 12 in 280; and Peterson,[21] who discovered 11 in 88. In their opinions, the disease was, to say the least, relatively common. Other writers were even more venturesome in the face of such great doubt. Satterthwaite[25] states "the importance of syphilitic lung affections has been greatly underestimated by the physicians." Rossle, Flockeman,[3, 4] Porter,[22] and others, also went on record as affirming that such might be the case.

It should not seem at all unreasonable to suppose that syphilis can and does attack the lung at least as frequently as it attacks any other tissue of the body; for example, the cardiovascular or the central nervous systems. An explanation of the seemingly wide discrepancies in the figures surely must be sought. Carrera[3] attributes this aberration to the multiformity of the lesions produced by syphilis, to the variation in personal criteria for making diagnosis, and to the failure to recognize the basic lesion of the disease. Whereas previously the gumma had been accepted as the fundamental process of late syphilis, it remained for the extravagantly elaborate and painstaking studies of Warthin[30] to demonstrate that the gumma is *not* the fundamental lesion, but that a mild inflammatory reaction characterized by the infiltration of lymphocytes and plasma cells was so frequently associated with the finding of the *Spirochæta pallida* in tissue that its specificity might well be recognized. Such mild inflammatory changes may eventually lead on to fibrosis and atrophy in which process the gumma may play an intermediate rôle. Thus by careful and exhaustive search it was found that the *Spirochæta pallida* may be shown to be present in many hitherto unsuspected lesions, and that the tissue elaborated by its presence may be recognized microscopically without the necessity of finding the spirillum.

Diagnosis of the lesions of late syphilis, therefore, becomes a function of the microscope, and not of the naked eye alone. And this seems particularly applicable to syphilis of the lung. Carrera, employing these newer criteria, was able to make positive diagnosis of syphilis of the lung in twelve out of 152 specimens taken from syphilitic patients in the laboratories of the University of Michigan. He further surmises that this number could doubtless be greatly augmented had he but time to prepare and examine serially whole lungs, rather than the common and less time-consuming practice of making diagnosis from sections taken at random from the organ.

From the foregoing, many facts may be gleaned. To the most skeptical, who deny its existence, it should constitute adequate evidence that syphilis of the lung does occur. To those who class it as an exceedingly rare disease, it may be shown that multiformity of lesions, variation in personal criteria, and failure to recognize the characteristic pathology of late syphilis, have so depressed its diagnosis as to place it falsely in that category. Authors who fail to employ this newer knowledge similarly tend to underestimate the incidence of the lesion.

---

* From the department of dermatology and syphilology, Los Angeles County General Hospital.

* Read before the Dermatology and Syphilology Section of the California Medical Association at the sixty-first annual session, Pasadena, May 2-5, 1932.

Carrera, in his conclusion, feels that it seems most probable that the lungs are involved in the mild general infection of syphilis to about the same degree that the other tissues and organs are. This, of course, leaves much room for enlargement and consideration.

CLASSIFICATION

There are many classifications of pulmonary syphilis extant, and they possess many similar and many differing points. Gumma and fibrosis seem to be common to them all. Fibrosis, however, is apparently given a multiplicity of names. The commonest of these is simple "fibrosis," also called "fibroid induration" by Claytor [4]; "dense fibrosis" by Hoxie [13]; "sclerosis" by the Karschners,[14] by Howard,[12] Rukstinat,[24] and Greer.[8] Stanley [29] terms it "diffuse" or "dense sclerosis," and Neuman[16] "diffuse lobar infiltration."

Bronchiectasis, suppurations, ulcerations, and gangrene are found in the classifications of Greer and of the Karschners. Syphilitic phthisis is included by Howard and by Rukstinat. Cavitation is described by Krohn.[17] Tylecote [29] adds a pulmonary arteriosclerosis, and a form which is primarily vascular. Carrera, in his more complete description, has shown that in addition to the gummatous and fibrous types there is a vascular type, and that arteritis is an important process in lung syphilis.

Each classification includes its pneumonia, but most authors fail to enlarge on whether their conception of the pneumonia is an acute or chronic process, and whether its scope is bronchial or lobar. From the context of their writings, however, it would seem that they consider the pneumonia as chronic, and usually of the interstitial type. A few writers, however, do mention an acute syphilitic pneumonia.

TIME RELATION OF PRIMARY INFECTION TO PULMONARY SYMPTOMS

The time lapse between the primary infection and the onset of pulmonary symptoms seems to have an important bearing on the nature and the symptom complex of the disease. In deference to the accepted opinion that pulmonary involvement is a late manifestation, we find most authors note a generous time lapse to intervene. The majority of reported cases occur more than five years after the initial infection, and certainly over three. Claytor [4] states the onset of pulmonary symptoms to be from one to twenty years after primary infection, and the most common being from five to ten years. In Rukstinat's experience,[24] as well as in Munro's,[18] the shortest period was three and one-half years.

A search for cases characterized by recent infection, thus more definitely placing the patient in the group of early syphilis, revealed but a few:

Henske,[9] three months.
Hauffman,[14] three months.
Zinn,[14] four months.
Stanley,[26] five weeks.
Ornstein,[19] four months after secondary eruption.
Dieulafoy,[14] ten months.
Downing,[7] twelve months.

In this group of cases, wherein the time lapse between chancre and appearance of pulmonary manifestations is of sufficient recency to be regarded as early syphilis, there does seem to be a different succession of events and symptoms differing from those exhibited by the usual type of lung syphilis as reported. There is more tendency for acuteness and more rapid evolution of pathology, such as might be anticipated in an early and acute infection.

THE RESPIRATORY TRACT IN SECONDARY SYPHILIS

Pulmonary manifestations that occur during secondary syphilis are but lightly regarded in the literature, as they are similarly lightly dismissed by the clinician. There are those who deny that such pulmonary phenomena are at all related to the syphilis. Fournier,[14] for example, believes that the dyspnea is purely nervous in origin. The predominating evidence, however, supports the contention that the pulmonary symptoms depend upon the secondary syphilis for their existence.

Early pulmonary pathology in association with secondary syphilis was first described by Dann under the title "Pulmonary Syphilis Precox." Reports from Rothschild, Schnitzler, Schirren, Gwyn, Chamtesse, and others, followed. Aside from a few roentgen-ray studies, however, but little is offered as indisputable confirmatory evidence.

The bronchitis of secondary syphilis was first described by Schnitzler [14] in 1880. Lancereux[14] advanced the hypothesis that the symptoms of the respiratory tract which occurred during the secondary stage of syphilis were dependent upon an exanthem of the mucous membranes, identical with that manifested by the skin. The Karschners [14] also feel that early pulmonary symptoms have as their basis the same exanthem, the result being a mild bronchitis and a secondary dyspnea. Wile and Marshall [32] express themselves similarly.

Stanley [26] states that the lesions of syphilis which affect the lungs and pleurae are numerous, and that they may be in the secondary or tertiary stages. The lesions due to secondary syphilis, however, are not of much clinical importance. This author is quoted merely because he typifies the current opinion.

SYPHILITIC PNEUMONIA

The next point, then, is that of whether, by direct attack or by virtue of toxins elaborated, the *Spirochæta pallida* is capable of producing a true pneumonia, and where, in classification of syphilis, would such a pneumonia be placed.

That pneumonia does occur in syphilitics cannot be disputed. Whether a portion of such pneumonias are dependent upon the *Spirochæta pallida,* however, remains to be established, and we find those who confirm and those who deny the con-

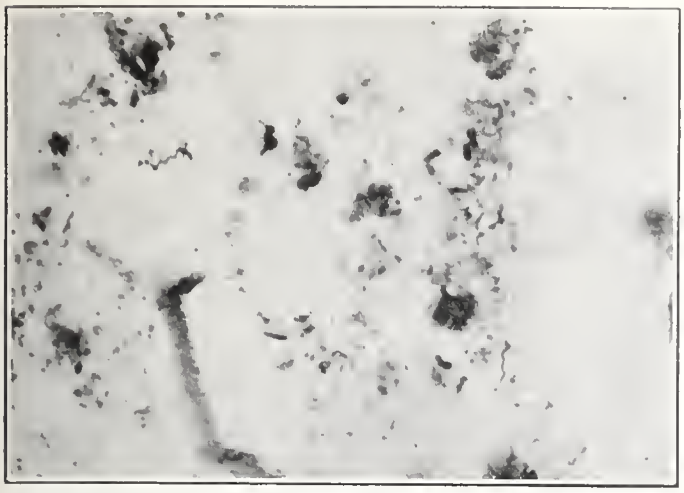


Fig. 1.—Section of sputum block from patient R. C., Levaditi stain, showing Spirochæta pallida.

tention. Wile and Marshall,[32] in their review of the literature, list the names of Councilman, Gambieni, Birch-Hirschfeld, Orth, Kaufman, Adami, and others, as being of opinion that pneumonia in syphilitics is not primarily luetic, but due to a secondary invader in the syphilis-weakened lung. On the other hand, they cite Neumann, Fowler and Godlee, Fournier, Dieulafoy, and Aufrecht among those who believe that a truly specific syphilitic pneumonia can and does occur. To the latter group may be added the Karshners.

Quoting from the Karshners[14]: "While the existence of syphilitic pneumonia is denied by some and affirmed by others, we believe that it occurs more frequently than is recognized." From Wile and Marshall [32] is taken the following: "We are inclined to subscribe to the view that resolving or activating changes in the lung, due to syphilis, may simulate very closely the picture of bronchopneumonia."

Rizer [23] and Douglas [6] both subscribe to the fact that an acute syphilis of the lung does exist, but feel that it is rare. Douglas further notes that the acute form may simulate and be indistinguishable from bronchiectasis, and from bronchopneumonia. Stokes [30] holds that syphilitic bronchopneumonia is a rarity.

Many roentgen studies of patients have been offered in the literature, but no true radiographic entity is yet accepted. Watkins,[34] for example, describes syphilitic bronchopneumonia as an irregular patchy affair, more irregular in outline than ordinary pneumonia, with more confluence, more mossiness of the edges, and more localization in the bases. In his opinion it may be confused with abscess, bronchiectasis, and with lobar pneumonia.

COMMENT

In the opinion of the authors, then, it seems quite probable that early syphilis can and does involve the respiratory tract quite frequently, and perhaps more frequently than is suspected. The evidence in favor of mucous membrane exanthemata as the cause of respiratory symptoms in secondary syphilis cannot well be denied. Positive proof, in fact, may be obtained from the report of Ornstein,[19] whose patient exhibited secondary syphilis and severe paroxysmal attacks of dyspnea. Mucous membrane patches were present in the pharynx, and by bronchoscopy identical patches could be followed down the trachea as far as could be seen. Further proof was adduced by the remarkable disappearance of attacks upon institution of vigorous antisyphilitic therapy, followed by reappearance when the patient allowed treatment to lapse, and a second remission when treatment was again instituted.

Granted that the mucosa of the trachea is subject to attack in the secondary exanthem, it also seems reasonable to suppose that this process by extension, or by direct invasion can involve the capillary bronchioles, or the alveoli of the lungs themselves. A process which in the pharynx can produce painfully sore throats, or which in the bronchi can evoke severe bronchitis, should likewise produce enough reaction to stimulate a definite tissue response when it involves the membranes of the lungs. The clinical picture produced by this response would be subject to much variation, dependent upon its intensity, localization, extent, and those mechanical peculiarities which might eventuate from an acute process occurring within the narrow confines of bronchioles or alveoli.

A mild, generalized mucosal involvement, for example, might produce such relatively mild pulmonary symptoms as to be lightly dismissed. Involvement of the bronchioles could produce a picture varying from mild bronchitis to that severe type of capillary bronchitis so closely allied to bronchopneumonia. A widespread and intense mucosal eruption might well produce a severe pneumonia, either broncho or lobar, dependent on its distribution. In fact, such a pneumonia might be so clearly of the usual bacterial types of infection that positive serology, and even frank syphilids, may be entirely disregarded in making the diagnosis and in treatment. Several instances which may fit into this category are found in the literature, most notably, the case of Henske.

Involvement of the respiratory mucosal surfaces being once established, the subsequent course depends on the natural tendencies of the disease plus, of course, the modifying factor of an active lesion within microscopically sized sacs, the lung alveoli. The predominating tendency, as in any mucocutaneous syphilid, is for spontaneous involution, even in the absence of treatment. In a certain proportion of the cases the natural tendency is for persistence, and with it, continuation of the pulmonary symptoms. The mechanical confinement of an acute process within the tiny alveoli may also favor continuation of the activity into a seemingly chronic or atypical pneumonia, and may also explain the mechanics of why caseation, fibrosis, and even cavitation may follow in the wake of an apparently acute pneumonia.

In the patients whose lungs fail to resolve promptly the predominant symptoms would naturally be the most apparent ones, such as the bronchitis; or, as in the case of Ornstein, the asthma; or, as in the case of Henske, the pneumonia. These may be so typical of commonplace, bacterial pulmonary infections that even the presence of genital lesions, of a secondary cutaneous exanthem, or of strongly positive serology does not cast the shadow of suspicion upon syphilis.

The whole clinical picture may be even further divorced from the apparent realm of syphilis in those cases where the exanthem is limited to mucosal surfaces alone, with no telltale cutaneous eruption visible. Particularly can this be true in that totally unsuspected group of mucous membrane relapse, wherein all that is detectable to the examiner are the pulmonary findings and a positive serology, hardly enough to inculpate the *Spirochæta pallida.* And many cases in the literature do show a definite tendency to relapse, particularly emphasized by the patients of Henske and of Ornstein. For the lack of more convincing evidence, a diagnosis of bacterial infection of the lungs or respiratory tree is made, and the positive serology accepted merely as evidence of "syphilis, latent."

The possible rôle of early pulmonary syphilis in the later evolution of the disease may also be turned into evidence in favor of its existence. Moore [19] finds that in the large majority of cases of neurosyphilis, invasion of the central nervous system occurs within the first few months of infection, and occasionally during a second period of generalization of the disease characterized by clinical and serological relapse. Hopkins,[13] in a supplementary report, noted that patients with latent syphilis and negative spinal fluid rarely developed parenchymatous involvement of the central nervous system; and in the very few cases which did, the infection was mild.

If we align these facts with those herein discussed, acute pulmonary syphilis can well represent the period of invasion occurring early in the infection. This is usually followed by quiescence for the usual period of time, after which the more familiar symptom complex of late pulmonary syphilis may make its appearance. Or the pulmonary involvement may similarly occur during a second generalization of the spirochaete, characterized by mucous membrane relapse involving the mucous membranes of the lower respiratory system, with or without cutaneous manifestation.

Positive proof, unfortunately, cannot be produced in a disease so rarely fatal in its early stages as syphilis, and one so readily amenable to treatment. Any evidence proffered is subject to doubt and incredulity; it is only in the rare instance that surprising material may be discovered. Henske's [9] patient exhibited early cutaneous syphilis which was treated and followed in a short period by relapse. During the course of the relapse the patient developed an acute and very classical lobar pneumonia; in fact, the course and findings were so typical that syphilis was not suspected at all, and it was not until the lungs had been examined under the microscope that the *Spirochæta pallida* was found present, alone and in great profusion.

REPORT OF CASE

R. C., white, male, age forty-five, single, was admitted to the Los Angeles County General Hospital on August 29, 1930. In his history he had noted a penile sore of four weeks' duration; "cold," with cough of two weeks' duration, and onset of fever and weakness two days before admission. Positive findings on physical examination revealed a fairly sick man, flushed cheeks, large tonsils, and on his oral mucosa several yellowish grey placques surmounting reddish bases. Dullness over apices of both lungs, increase in transmission of voice and breath sounds, tubular breathing and moist râles anteriorly from the fourth rib upward; blood pressure, 110/66; rubbed off, infiltrated ulcer on underside of the penis. A clinical diagnosis of pneumonia, syphilis primary of the penis, and syphilis secondary (mucous membrane of throat) was made.

Laboratory data showed a normal urine, elevated white count, and 100 per cent inhibition in the Kolmer, and complete precipitation in the Kahn tests on blood serum. Darkfield examination of penile sore negative. X-ray of the chest revealed area of homogeneous density in the upper right lobe, consistent with lobar pneumonia, with early empyema to be ruled out.

On the third day after admission the patient was very sick and toxic, and reëxamination showed extension of the pneumonia over the entire upper third of the right lung. Diagnosis of lobar pneumonia was confirmed, and possibility of an acute tuberculous pneumonia considered.

On the fourth day the patient was delirious and ran a high fever. A visiting physician again confirmed the diagnosis of lobar pneumonia, with the suggestion that the slightly irregular clinical picture might be due to syphilis.

On the next few days the temperature remitted slightly, but on the ninth day a sharp rise occurred, accompanied by delirium. The white count at this time was 19,480. On the eleventh day, 0.3 grams of sulpharsphenamin was given intravenously. At this time there was still evidence of consolidation in the right upper lobe. On the following day there was another abrupt rise in temperature with increased toxicity, with white count at 26,350, 81 per cent polymorphonuclears. X-rays revealed a decrease in density in the right upper lobe, suggestive of partial resolution with a density extending downward, suggestive of extension of consolidation to the base.

On the fourteenth day a second dose of sulpharsphenamin, 0.3 grams, was given intravenously. On the following day the temperature dropped to 99 degrees Fahrenheit and definite improvement in the patient noted. X-rays on the eighteenth day revealed clearing of the base. A third dose of sulpharsphenamin was given on the twenty-first day. X-ray, then, revealed the lung fields to be clearer than at any previous examination, but still presenting irregular coarse granular infiltration in the right upper lobe, a high diaphragm on the right, and retraction of the mediastinum to the right. Under weekly injections of sulpharsphenamin, the patient made rapid progress, and by the thirtieth day all physical findings were gone, the white count normal, and temperature flat for some time. X-ray three months later showed disappearance of retraction of mediastinum, persistence of high diaphragm, and some increase in lung markings.

Blood cultures were persistently negative.

Sputum studies were interesting. They were consistently negative for the tubercle bacillus. On the twenty-first day a specimen of sputum was taken. At this time the mouth and throat were clean, and smears were negative except for some pus cells and bacteria. The specimen consisted of a large, solid mass of mucopurulent sputum, which was washed repeatedly and carefully, and placed in formalin. The contaminated outside was discarded and the internal portion stained by the Levaditi method and examined. The report from the pathologist stated that examination of this preparation revealed spirochetes presenting the morphology of the *Spirochæta pallida.*†

1100 North Mission Road.

---

† The authors wish to express their sincere thanks to Mr. A. A. Krajian for his kind assistance in preparing the tissue and in staining for spirochetes.

REFERENCES

1. Buchanan, R. J. M.: Syphilis of the Lung, Brit. Med. J., 1:318, 1907.
2. Carlier, Georges: Étude sur la Syphilis Pulmonaire, These de Paris, 1882, p. 355,
3. Carrera, J. L.: A Pathological Study of the Lungs of One Hundred Fifty-Two Cases of Syphilis, Am. J. Syph., 4:1, 1920.
4. Claytor, Thomas: Syphilis of the Lungs, Am. J. M. Sc., 129:563, 1905.
5. de Paul: Sur une manifestation de la syphilis congenitale, Bull. Acad. de med., Paris, 17:503, 1850.
6. Douglas, R. G.: Syphilis of the Lungs, New Orleans M. and S. J., 80: 304, 1927.
7. Downing, Andrew F.: Syphilis and Lung Disease, Boston M. and S. J., 172:898, 1915.
8. Greer, A. E.: Syphilis of the Lung—Case Report, Am. J. Syph., 14:195, 1930.
9. Henske, J. A.: Syphilitic Lobar Pneumonia, Med. Fortnightly, 33:243, 1908.
10. Hiller, A.: Uber Lungesyphilis und syphilitische Phthisis, Charitee Ann, 9:182, 1884.
11. Hopkins, H. H.: Prognostic Import of a Negative Spinal Fluid in Early and Latent Syphilis, Arch. Dermat. and Syph., 24:404, 1931.
12. Howard, C. P.: Pulmonary Syphilis, Am. J. Syph., 8:1, 1924.
13. Hoxie, G. H.: Syphilitic Pneumonia, Southwestern Med., 26:169, 1918.
14. Karshner, R. F., and C. F.: Syphilis of the Lung, Ann. of Med., 1:371, 1920.
15. Lord, F. J.: Disease of Bronchi, Lungs, and Pleura, Lea & Febiger, 1915.
16. McIntyre, Mary: Pulmonary Syphilis, Arch. Path., 11:258, 1931.
17. Moore, J. E.: Genesis of Neurosyphilis, Arch. Dermat. and Syph., 4:55, 1921.
18. Munro, W. T.: Syphilis of the Lung, Lancet, 2:1376, 1922.
19. Ornstein, George: Pulmonary Syphilis, M. Clin. North America, 9:357, 1925.
20. Osler, William: System of Medicine, Vol. 2, p. 170; Modern Medicine, Vol. 3, p. 407.
21. Peterson, R.: Zur Kenntnis der Lungensyphilis, München, med. Wchnschr, 40:725, 1893.
22. Porter, William H.: Phthisis and Pneumonia in Their Relation to Syphilis, New York State J. Med., 42:114, 1885.
23. Rizer, R. E.: Syphilis of the Lung, Ann. Int. Med., 3:452, 1929.
24. Rukstinat, G. J.: Syphilis of the Lung, Arch. Path. and Lab. Med., 2:473, 1926.
25. Satterthwaite, Thomas E.: Pulmonary Syphilis in the Adult, Boston M. and S. J., 124:573 and 600, 1891.
26. Stanley, J. Douglas: Lung Syphilis, Brit. Med. J., 2:802, 1911.
27. Stokes, John H.: Modern Clinical Syphilology, Saunders, 1926.
28. Symmers, D.: Anatomic Lesions in Late Acquired Syphilis, J. A. M. A., 66:1460, 1916.
29. Tylecote, F. E.: Pulmonary Syphilis, Lancet, 2:637, 1927.
30. Warthin, A. S.: New Pathology of Syphilis, Amer. J. Syph., 2:425, 1918.
31. Watkins, W. W.: X-Ray Characteristics of Lung Syphilis, J. Radiol., 1:297, 1920.
32. Wile, U. J., and Marshall, C. H.: Visceral Syphilis; Syphilis of the Lung, Arch. Dermat. and Syph., 4:37, 1921.

DISCUSSION

H. W. Stephens, M. D. (384 Post Street, San Francisco).—The authors are to be congratulated on the excellent presentation of this somewhat hazy subject, namely, syphilis of the lung. The important literature concerning syphilis of the lung was reviewed in this paper, and the authors introduced thereby rather convincing proof that not only is an acute and early syphilitic infection of the lung possible, but probable. We are all familiar with the so-called "white pneumonia" of the new-born heredosyphilitic, and with gummata of the lung, which represents the late stage of syphilis of the lung. We are not familiar with the acute pneumonic form of which the authors speak because we have no means of identifying this type definitely. Patients, whom we believe to have this form of syphilitic disease, rarely, if ever, die and therefore we have neither gross nor histopathologic description. The clinical history, and the roentgen-ray and sputum studies are too variable to be helpful, so that our diagnosis of acute syphilitic pneumonia necessarily must be presumptive. The case presented by the authors as one of acute syphilitic pneumonia was so diagnosed because of the apparently favorable reaction of the patient to antisyphilitic therapy and the possible demonstration of the *Spirochæta pallida* in the sputum. A medical consultant in the same case justifiably questioned the diagnosis; surely the fact that a spirochete, resembling the *Spirochæta pallida,* was found in the sputum is not sufficient evidence upon which to make a diagnosis unless it is supported by careful cultural studies and animal inoculations.

The authors most ably presented and emphasized an acute disease which many of us undoubtely overlook many times a year; our knowledge of the acute manifestations of syphilitic pneumopathy is increased by this manuscript and an added stimulus is given to further investigative study.

* * *

Norman Epstein, M. D. (450 Sutter Street, San Francisco).—Respiratory infections which could be attributed to syphilis have been very rare in our experience at the University of California. During the past ten years only one patient was observed in which a fibrosis of the bronchial tree of both lungs was present, apparently the end-result of a syphilitic infection.

In conjunction with the chest department we have been much interested in this subject. A number of patients with secondary syphilis have been examined clinically by Dr. S. Shipman, and also radiologically, but to date no definite evidence of syphilitic involvement of the lungs has been obtained. It was felt that bronchoscopic examination of these patients was too dangerous for the operator to be undertaken, although such an investigation would be of considerable interest.

The diagnosis of syphilitic infections of the respiratory tract is very difficult and surrounded with many uncertainties. But we must agree with the authors that they occur and probably more frequently than we are aware. The subject is also of considerable importance, particularly from the standpoint of therapy. In the presence of a respiratory infection, we are loathe to administer intensive antiluetic therapy, yet the patient with syphilis of the lung is in need of just such treatment. At times this problem can be quite baffling, but by making use of the improved methods for diagnosis of intrathoracic disease and by careful consideration of each individual case, fewer errors in therapy should be made.

The authors have presented a case with sufficient evidence to establish a diagnosis of syphilitic pneumonia and have thoroughly reviewed the subject. They are to be congratulated for bringing the condition to our attention.

* * *

Barclay E. Noble, M. D. (523 West Sixth Street, Los Angeles).—The authors' careful review of the literature is very interesting and brings out clearly that we have few clinical criteria for diagnosing "syphilitic pneumonia," and that opinions are more numerous than facts.

The patient here presented was on the pneumonia service, so it was my good fortune to see him daily and discuss this very peculiar case with some fifteen different consultants, including Doctor Chambers. The chest men were specially interested in the marked retraction of the mediastinum to the side of the lesion in the first fourteen days of illness; the gradual "creeping" of the consolidation from apex to base with "clearing" behind; the sputum, which was scant, viscid, bloody, and raised only one to two times a day for one month; the clubbing of the fingers, beginning about the twenty-eighth day; and the greatly protracted course with the patient still having definite pulmonary changes (a band of opacity in the region of the upper right mediastinal pleura and persistent moderate retraction of mediastinum toward side of original lesion without visible fibrosis) at the time of his discharge on his one hundred fifteenth day.

The evidence for syphilitic pneumonia has been ably presented. Most of the men in the chest department were reluctant to accept this diagnosis, since this vagrant, though proud of his "conquests," denied intercourse for the six months preceding his penile lesion; several darkfield examinations of material from the penile lesion, lesions in mouth and sputum were negative, while fusiform bacilli and spirilla were found among other bacteria, in all smears; the Wassermann and Kahn reactions became negative after four injections of three-tenths of a gram of sulpharsphenamin and one dose (one-sixth gram) of mercury succinimid; the Fontana smears of the sputum were negative; and Krajan's Levaditi method was here used for the first time and so is open to question, particularly since many spirilla were present.

Dr. D. D. Comstock, senior attending man in charge of the patient, thought the most likely diagnosis was a pneumococcic pneumonia modified by secondary lues. (Pneumococci were found repeatedly in the sputum.) Personally I should like to think I had seen a "syphilitic pneumonia," but the presence of fusiform bacilli and spirillae in all examinations, and the prompt response to arsphenamins make me feel that a mixed infection with Vincent's organisms is a more likely diagnosis. Perhaps here the added organisms necessary for abscess formation were lacking.

In closing, I wish to express my appreciation to the authors for asking one with a different opinion to discuss their paper.

⁂

Doctors Olsan and Chambers (Closing).—The authors in closing refer to the points under discussion as having been adequately covered in the contents of the text. Acknowledgment is made in appreciation of the thoughts expressed by Doctors Epstein, Stephens, and Noble in their discussions.

THE LURE OF MEDICAL HISTORY[*]

JOHANN SIGISMUND ELSHOLTZ (1623-1688)[†]

CLYSMATICA NOVA (1665): ELSHOLTZ' NEGLECTED WORK ON INTRAVENOUS INJECTION

By Ethel Gladstone
San Francisco

IV[‡]

Chapter IX. *Inferences Concerning the Diseases to Which This Art Is Applicable.*—It is clearly evident from the establishment of these facts, not only that transfusion of blood is possible, but that it is permissible to inject in the veins of sick people medicinal and health-giving liquids, according to the circumstances. Still, there is absolutely no doubt that drugs injected in this manner can kill a man equally or more swiftly than the poisoned weapons of the Americans, of which frequent mention is made in books of navigation written about the New World. Nor should we believe that all of those very sudden and horrible symptoms which are told of in those books have been produced in the wounded save only through the disturbance of their blood.

But in considering drugs which are healing and suitable to human nature, I think that, first, we should immediately make a distinction between those whose use is more suitable either to the organs of the abdomen, or to the head and brain, and those which especially counteract diseases of the heart and therefore are applicable to the middle cavity of the body.

If you consider, you will see that cathartics, emetics, and narcotics are prominent among the former drugs. *Purges,* since they must cleanse the stomach, intestines, and kindred organs, are more easily taken through the mouth than through a vein. Hence Hippocrates insisted long ago in his time that the closest channels should always be chosen, and that material should be carried away through convenient places (Bk. I, Aphor. 21).

Emetics, to wash the stomach, are given in the same way; for the chest is cleansed at the same time. In this case, too, the mouth is the closer way to the stomach.

Narcotics, since their strength exerts itself chiefly in the head, go nearer through the heart by the use of the clyster than if taken through the mouth. But I did not easily dare to find out the legitimate and safe dose of these and the preceding drugs for a man. For by a decree of the Magistrates, experiments of this kind first had to be undertaken on those who, because of their crimes, were condemned to public execution.

As to the other type of drugs, which are particularly good for heart diseases, there is scarcely any doubt that their infusion in the heart can be beneficial. An enumeration of the principal heart diseases follows:

I. Loss of strength, Leipothymia, and Syncope. To alleviate these, a certain cordial tincture would be suitable. It is prepared from coral, pearl, bezoar stone, amber, *confectio alchermes, aurum potabile,* and similar material. Certainly it would be very desirable in syncope, when nothing can be taken by mouth, to inject a few drops of a tincture or essence of this kind through a vein to relieve the heart.

II. High Fevers, and Intemperate Heat of the Heart. Here some kind of delicate, cooling tincture would be excellent, especially if the patient is nauseated and refuses all remedies given by mouth.

III. Petechial Fever, Infection, and Poison Transmitted either through Food or Drink. The heart suffers greatly from all these, and it frequently happens either that the throat is constricted or its strength is so exhausted that nothing more can be poured in through the mouth. In this case orvieto dissolved in *aqua theriacalis,* or some other precious poison antidote, is of the greatest benefit and saves many people.

---

[*] A Twenty-five Years Ago column, made up of excerpts from the official journal of the California Medical Association of twenty-five years ago, is printed in each issue of California and Western Medicine. The column is one of the regular features of the Miscellany Department of California and Western Medicine, and its page number will be found on the front cover index.

[†] From the University of California Medical School Library.

[‡] Part I of this translation of the *Clysmatica Nova* of Elsholtz was printed in California and Western Medicine, June, 1933, page 432; Part II in July, page 45; Part III in August, page 119.

IV. Palpitation of the Heart. Until the present time it has been extremely difficult to cure this malady, because remedies taken through the mouth were compelled to go through too long a channel to the heart. Now that a closer way has been found, perhaps this disease will be more easily done away with.

V. Besides the diseases just enumerated, there is this to be considered, too: blood is carried from the right sinus of the heart through the lungs in a small, peculiar circle and, moreover, in this passage penetrates their parenchyma as a whole. Since this is so, it is true that in phthisis suitable drugs can be transmitted much more closely to the lungs in this way than if taken by mouth.

VI. In bad cases of apoplexy, epilepsy, angina, suffocation of the uterus, and similar acute and sudden diseases, good practitioners know how often, to the consternation of the doctor and the people at hand, all medication through the mouth fails. But when people are so ill, with their lives in such danger, what should prevent help being given, no matter how unusual the method? This cure, which is unique, would be safe enough, according to Cornelius Celsus.

VII. Moreover, the heart not only was not formerly considered such a primary blood-making organ by Aristotle as it is today by the majority of modern physicians, but also the blood contained in the whole body goes through the heart without cessation. This being true, it is permissible to conclude that in cases of scurvy, podagra, cachexia, venereal infection, and diseases of this kind, in which there is a mass of blood which is impure or infected in some other way, a prepared tincture can be beneficially injected in the tainted blood. If anyone possesses a *tinctura philosophorum universalis* or a certain other long-sought panacea, he can bring it into use at this time and in this way, and so gain outstanding renown.

In particular, we must certainly conclude about the use of transfusion.

I. That one animal can live by means of the blood of another; or that animals which have too little blood or whose blood is infected can be restored to health by substituting blood taken from other animals, and by taking care, when it is infused in suitable quantities, that the infusion is repeated as often as necessary, since blood in itself is easily dissipated.

II. Although Dn. Dionysius, (as we mentioned in Chapter VI) sets forth quite plausible reasons why the blood of animals is more suitable for transfusion than that of men, still, on the contrary, it cannot be denied that men's health is of noticeable extent. There surely are very robust young men in perfect health, and it certainly does not seem at all absurd that they can be of use, because of their superabundance of blood, to feeble old people or to others weakened by disease.

III. If we had exact knowledge of temperaments, we could attempt to find out whether, by infusing the temperate blood of a melancholic into a sanguineous or the heavy blood of a phlegmatic into a choleric, we could gradually correct and modify them reciprocally.

IV. Diseases arising from corrosion of blood, as, for instance, many types of ulcers, are generally cured with difficulty, because drugs taken through the mouth lose a large part of their strength on the way. But new, very temperate blood, transfused either from another man or from a lamb, a calf, or a similar animal, seems to give relief more promptly and safely, since it goes directly to the part affected. Time will disclose further uses.

* * *

Chapter X. *Other Uses.*—But let us proceed farther and find out whether this new science can be of use in another way, also. Surely it is known how much zeal those authors expend, who write books about diseases of the human body transplanted into trees. Moreover, they all, without exception, take care that their readers should not suspect them of sorcery, and so of being enabled to do all these things through lawful magic, sympathy, or magnetic force.

Thus toothache, along with some blood, is lured from the gums into an elder-tree. Furthermore, they undertake to cure gout by drawing forth the blood from the feet by scarification and pouring it three times into a young willow-tree; and they attempt many other cures of this kind.

But if there is anything to these magnetic cures, a quicker and more certain method would be to transfuse afflictions of this sort, together with the blood, into beasts, rather than trees. For plants are farther from human nature than animals, and brutes would draw the infection of disease into themselves more easily than vegetables.

Moreover, most compilers of secrets (among whom is the author of the German *Steganology*, who is generally believed to be Daniel Suentus, a mathematician of Nuremburg, in bk. III, num. 5, and also Joannes Staricus in the *Thesaurus of Heroes* pt. 2), make mention of a mystery, the benefit of which has been established so that, even in widely separated regions, friendly minds can relate ideas to each other in a short time.

These writers further advise that before Mars and Mercury separate, Mars should wound himself slightly on the forearm with a lancet and let the blood flow until it is completely dry. Mercury should wound his finger in the same way, taking care that two or three drops of his blood drip into Mars's wound. Then a plaster is placed over the wound so that the drops of blood will remain and combine with it. Conversely Mercury gives himself a slight wound in his forearm and takes in it some drops of blood from Mars's finger, so that each will have in his forearm a little of the other's blood.

Then they assert that the scars which remain after the wounds heal will be completely sympathetic; so that if Mercury pricks his scar with a needle, Mars, who is not present, because some of his blood is in that scar, will feel the prick in his own; and conversely. But before they separate they must agree about what is to be understood by a single, double, or triple prick; and in this way the authors think that these friends or brothers, because of the agreement between them, will be able to speak to each other about certain questions without mistake, and as often as they please.

I certainly do not wish to undertake a defense of this mystery now; let those who have experienced it, believe it. Nevertheless it is well known that mortal minds have long been occupied in discovering a method by which, through the injection of one person's blood into the body of another, an important and praiseworthy achievement would be accomplished; that is, by gaining control of that sympathy sung of in all ages.

Meanwhile, if we may be permitted to continue with our own inferences, let us simply carry this open secret further, to other uses. In ordinary life, there is much too frequent, and sometimes implacable, dissension between blood brothers, and also between husband and wife; but an efficacious remedy for this evil is scarcely ever sought.

What if a transfusion of blood, a mutual one, were made between the quarreling husband and wife? For if the spirits in the husband's blood were mingled with those in the wife's body, and conversely, those in the wife were mixed with the spirits in the husband's body, would the couple be mutually united in sweet harmony?

Certainly much good should be expected from this, unless the statements which philosophers have made about the strength of sympathy are all false.

The operation in itself is safe and not difficult, especially if it is done with syringes, not with tubes; the following chapter should be consulted about this difference. And if this operation between a disagreeing husband and wife should prove successful, this unparalleled mystery would be of much profit to the public welfare—and would be able to make some doctor rich. Besides, a doctor who excelled in this art would merit the name of conciliator in the commonwealth by greater right than Peter of Abano did.

* * *

Chapter XI. *The Method of Operating is Repeated.*—Before I bring this little book to a close, it seems wise at this point to repeat and explain briefly the method which should be observed in the operation, in accordance with the different branches of the discovery. But indeed, in Chapter IV, we explained everything that pertains to simple infusion so clearly, with different experiments and two illustrations, that the directions would be uselessly retold here; since, following the example of those words, no one can feel uneasy about injecting various liquids through the veins, both in animals and in men.

Next, let us consider that other branch, in which blood is transfused from one animal to another, or from an animal to a man, or from one man to another. This should be done through tubes, as is described and illustrated in Chapters VI and VII. Although this method seems very laborious, it is nevertheless excellent, and is able best of all to preserve the spirits of the flowing blood and prevent them from evaporating. But a still easier method is to use a syringe, but one a little larger than that which is employed in simple infusion.

If a transfusion is to be made from a lamb to a man, first, the point of the syringe should be closed up very exactly by a rather thick needle. Then, when the plunger is drawn back, the piston becomes moderately warm. Next, either an artery or another major vein of the lamb is opened, and the flow of blood is checked by a finger placed over it, until the warm piston has been applied to the wound.

Moreover, four observations must be pointed out here. The limb in which you have opened the vein should be turned upwards (1) So that the blood can slip down perpendicularly into the piston which has been placed under it. (2) So that the piston can be applied closely enough to the opened vein to prevent the dissipation of the spirits. (3) So that the piston will not be filled to the rim, but a space the size of a thumb's breadth will be left. (4) So that when the blood has flowed into the piston, the plunger can be thrust in without delay.

When these things have been attended to, leaving the lamb, you should turn to the man, who is to receive the extracted blood. An assistant should skillfully open a vein in his elbow or leg, or should hold one which has already been opened. Then you should gently thrust the point of the syringe, with the needle removed, into the opened vein and compress the skin, holding in the warm blood. Then gradually thrusting the plunger between the assistant's fingers, you should direct it toward the heart, as has also been shown in Chapter IV, Figure II.

Finally, in reference to mutual transfusion between two men, anyone who understands the method of simple transfusion, through a syringe, now thoroughly explained, cannot be ignorant of the method to be used in reciprocal. The only difference is that in reciprocal transfusion two syringes are required, while one is sufficient for simple. Obviously, the extraction of blood in each man must be performed at the same time, before you begin the infusion; then the blood which has been extracted should be injected in each at the same time, so that duplicate apparatus is absolutely necessary.

If this operation should be performed through tubes, it would be far more laborious than if done with syringes; but no more impossible than if someone should ask for a transfusion from his right forearm to his left. Just as the veins must be opened in each forearm of that man and tubes inserted, so also if two men desire transfusion. For Mars must give blood from his right forearm to Mercury's left one, and in turn should receive blood from Mercury's right forearm in his left one. Meanwhile, a ligature should be applied to the right upper arm of each; and the curved ends of the tubes, when they are inserted, must be properly directed to pour out and receive blood.

* * *

Chapter XII. *Conclusion.* — Finally, therefore, from these facts which have been published, it is evident that the seeds of this discovery have now been scattered through the principal regions of Europe, and that through skillful industry they will gradually bear much fruit of benefit to the sick, if I am not deceived. Moreover, the method is well known by which this work, in all its branches, can be successfully performed on man, as well as brutes.

Besides, since it is now common knowledge that the French are attempting to take the disputed glory of this discovery from the English, and the English from everyone else, let us as scholars fittingly call to mind what M. Cicero once said to the men of his time, and which is just as true today: "Each man, in his turn, contrives snares for himself."

But let the Italians contend with the French about their priority, and the English with the Germans; perhaps they all are right, since their ideas about the subject coincide. It is just the same as when, long ago, Anacharsus Scytha and Hyperbus Corinthus invented the potter's wheel at the same time in widely separated places. This conformity the Greeks oddly call *concurrence*, or coincidence; one brings lime and sand, another water and building material, when a king's palace is to be constructed; this work, too, will progress in the same way.

However, ambition does not trouble me greatly, so that I would grudge that bit of fame to others; I am very far from ascribing praise to myself with my own words. For it is found in the Sacred Writings, "Let another man praise thee and not thine own mouth; a stranger, and not thine own lips." Proverbs, xxvii, 2.

Nevertheless, since this question has been aired seriously here and there, it does not seem to me that I am mistaken, or that I am unjust to anyone, if I believe that I first made in suitable quantity and adequate variety the experiments in simple infusion on which this whole discovery depends; and that I then first combined these experiments properly (and certainly this is the hinge on which the whole affair turns).

Surely speculations alone are not sufficient in this case, or conversations held with friends, and similar dissertations, of which type was that of Dom. Robert des Gabets of the Benedictine Order, cited in the *French Journal*. There is need instead of experiments made by hand, and of published writings.

Anything that was attempted long ago at London or in France seems to have been done purely for individual research; before the sixty-fifth year of this century, when our *Clyster* first appeared, no book by the French or English, much less the Italians (as I absolutely know), had been published about this discovery.

But come, let us leave this contention, for you will say, by no means undeservedly, that we have been arguing about an impoverished kingdom. Let us, rather, exhort all doctors and surgeons, now that the ice is broken, not to continue in their idleness and carelessness; but rather to become interested in the safe remedies which can be applied in this new way, to be eager to get proofs of this discovery whenever the occasion presents itself, and to continue to strengthen this growing art for the greatest glory of the most gracious God, and for the health of the sick.

FINIS

CLINICAL NOTES AND CASE REPORTS

RUPTURE OF UTERUS*

By Leon J. Tiber, M. D.
Los Angeles

BETWEEN February 1 and April 1, 1932, two patients with ruptured uterus were admitted to the Obstetrical Service of the Los Angeles General Hospital. These cases were similar in that they both occurred during pregnancy and each rupture occurred at the site of a previous classic cesarean section scar. The uterus was removed in each case and the patients recovered.

REPORT OF CASES

Case 1.—On February 12, 1932, W. T., white, age twenty-five, seven months pregnant. Her first pregnancy terminated by classic cesarean section two years before. With the first pregnancy, patient had ruptured the bag of waters spontaneously and was in dry labor thirty-six to forty-eight hours. Cesarean section had been performed on account of (1) cephalopelvic disproportion, (2) mouth of uterus calloused (?). Patient discharged home thirteen days after operation, with "bleeding navel," which had healed one week later. Ventral hernia followed operation.

Patient had abortion in January, 1931. Last normal menstruation July 16, 1931. Six weeks later patient noticed a pulling pain about navel and pain in lower left side of abdomen. At clinic was assured she was normally pregnant.

On January 25, 1932, patient had a sharp pain in abdomen after which a slight and painless bleeding began. Admitted to St. Vincent's Hospital, where she remained under observation for one week, during which time bleeding ceased.

On February 11, while at stool, patient again had sharp pain in abdomen, became faint, then began to bleed from the vagina. Was seen by City Maternity doctor, but no examination was made until patient was admitted to this hospital.

During early evening patient began to bleed profusely, bright red blood, saturating seven pads. Then bleeding discontinued throughout night. During day of February 12, patient used seven pads, saturating three. Passed small clots throughout day, while character of the bleeding changed from serosanguinous discharge to brownish discharge.

Examination showed uterus two fingers above umbilicus. F. H. T. not made out. Souffle present in left abdomen, quite loud. No vaginal bleeding at time of examination. Temperature, 99.4; pulse, 108; respiration, 20; blood pressure, 120/75.

Patient was operated on that day at 11:30 p. m. The uterus was found to be ruptured in two places along the site of the old scar, each opening about three centimeters in diameter. One tear was in fundus, the other about three and one-half centimeters lower, with intervening scar still intact. An anteriorly implanted placenta protruded from the ruptured areas. There was no active bleeding nor was there free blood in the abdominal cavity. The uterus was opened and hand thrust through placenta; fetus delivered alive at 12:10 a. m. Supravaginal hysterectomy and hernia repair performed, the patient leaving the operating room in fair condition. Patient made an uneventful recovery. Baby died. Patient sent to her home on March 5.

* * *

Case 2.—On March 9, 1932, V. D., white, age eighteen, at term of her second pregnancy. The first pregnancy terminated by classic cesarean section one year before, after which she made an uneventful recovery.

---

* From the Obstetrical Service of Doctor Lazard at the Los Angeles County General Hospital, Unit No. 1. Reported with his permission.

Patient suffered no unusual symptoms during this, her second pregnancy, until March 8, on which day she was admitted to a small maternity hospital. On this date labor pains began at 8 a. m. and continued at ten-minute intervals throughout the day. At 6 p. m. patient had a sudden sharp, stabbing pain in the abdomen, after which labor pains ceased. At 9 p. m. patient started to faint and continued to faint, until given a hypodermic, after which she slept till 6 a. m. On awaking, patient discovered she had been bleeding vaginally during the night and had severe abdominal pains and cramps. Pain was markedly aggravated by any motion. Patient was then seen by a physician and was immediately transferred to this hospital and operation done at 12 noon.

Patient was admitted in a state of shock and showed marked pallor. Temperature, 101; pulse, 128 and thready; respiration, 32; rapid, shallow, and labored increased breath sounds throughout chest anteriorly; heart rapid and weak; blood pressure, 96/60; hemoglobin, 60 per cent; red blood cells, 2,600,000; white blood cells, 18,800; polymorphonuclears, 90 per cent; lymphocytes, 10 per cent; urine negative; no active bleeding vaginally. The abdomen distended, tense, very rigid; peritoneal reflexes positive; fetal parts not palpable nor could any F. H. T. be heard.

Immediately upon opening the peritoneum there was a sudden gush of blood and the placenta exuded intact. The fetus, surrounded by its unruptured bag of waters, was found to be lying free in the abdominal cavity. It was removed by breech extraction. Baby was stillborn.

The uterus was found to be completely ruptured on the anterior surface over the entire length of the old scar. It was contracted firmly down in the pelvis and was not bleeding. The uterus was removed supravaginally. The abdomen contained at least one quart of blood and blood-clots, which were removed before the abdomen was closed.

During the operation patient was given stimulants as well as intravenous medication. These were followed by a transfusion. Patient left operating room in critical condition, but much better than on admission.

Patient made an uneventful recovery and was discharged from the hospital on March 27.

COMMENT

1. The scar of the classic cesarean section may rupture during labor or at any time during the last three months of pregnancy.

2. In one of these patients the location of the placenta over the scar seemed to have acted as a plug and prevented hemorrhage.

3. The first symptom noted in these patients was severe, sharp abdominal pain.

4. In one case the rupture of the scar allowed the uterus to completely empty itself, thus effecting good contraction and retraction which prevented hemorrhage.

5. A common sign of rupture of the uterus during or preceding labor is external bleeding.

6. Scar tissue from the former cesarean was present in abundance in each of these patients and the line of rupture was in the scar tissue.

7. In view of the fact that there is danger of a second rupture in subsequent pregnancy, and because of the time required to freshen scar edges, it is, by some, considered good practice to remove the uterus in these cases.

FURTHER OBSERVATIONS ON VACCINE THERAPY IN RESPIRATORY CONDITIONS*

By Francis Williams, M. D.
San Francisco

The following remarks are based chiefly upon the use of mixed respiratory vaccines in the treatment of common colds. My apology for presenting the topic is that since I presented a previous paper on the subject about fifteen years ago, few, if any, papers upon the subject have come before the society.

Mixed respiratory stock vaccines have been used for colds in the head, throat, and lungs; pertussis; epidemic influenza; asthma, chiefly in children and young adults; and pneumonia. We have had most experience with colds. The initial dose of mixed vaccines (respiratory type) used varied from .2 to .3 for children under ten years, up to .5 to .6 for young people and adults. The treatment is repeated at two to four-day intervals with an increase of 25 per cent in the dosage, and continued until a course of three to six injections have been given.

Just a word as to site for the injection: The gluteal area, just high enough to avoid pressure when sitting and usually on the left, as most persons sleep on the right. The anterior axillary fold is another good site, just above the breast, especially for women and fleshy men. A mild local reaction is usual, but at times associated muscles react and become lame or sore. Occasionally there occurs a constitutional reaction with fever and grippe symptoms. At times it is difficult to separate a vaccine reaction from the precipitation of an attack possibly pending, or actually induced during the negative phase of a vaccine reaction. The reactions or attacks are usually brief, from a few hours to a day or two, and recovery with improvement is the rule. The majority of patients are scarcely conscious of the reaction stage, but note improvement in twelve to twenty-four hours.

Many persons are conscious of such distinct help from the vaccine therapy that they form the habit of presenting themselves in the early stages of a cold for a vaccine, or serum as they frequently designate it. The permanency of such immunity as the vaccine confers varies, apparently from only a few weeks to over a year. It would be readily agreed that natural immunity varies to the same degree. It is difficult to state an average duration, but three to six months would probably be a fair estimate of the time during which immunity continues in greater or less degree. I have never seen a case made worse or whose immunity was reduced by respiratory vaccines, but have seen a few that gave such severe local reaction that it seemed inadvisable to use it further. One patient developed a small local abscess in the first injection site, and a smaller one at the second injection.

There is more prompt relief in colds of the head and upper respiratory tract than in bronchial conditions, but much may also be accomplished in the latter. Whooping-cough if treated early is favorably affected both as to duration and intensity, and even when treated later is usually aided, especially in conjunction with x-ray treatment of sufficient intensity, to reduce the congested lymphoid tissue of the hilus area.

---

* Read before the San Francisco County Medical Society, October 4, 1932.

As to the value of vaccine therapy in pneumonia, my impression favors its prophylactic value. It has been true that I knew of no case of pneumonia arising from the portion of my clientele accustomed to vaccine therapy for the treatment of colds. This held true even during the great influenza epidemic, at which date I had been using respiratory vaccines rather freely for four or five years. During this epidemic I gained the impression that patients accustomed to the vaccines had influenza in a lighter form, and escaped the pneumonic type.

Border-line asthmatic cases, comprising especially asthmatic symptoms associated with incipient chronic bronchitis, are favorably affected by vaccines plus x-ray radiation of the bronchial glands. The value of x-ray as an aid probably results from its action on congested lymphoid tissue. The treatment of asthma calls usually for all our resources, and often for a careful choice of agents in relation to cause. To test the patient's sensitiveness for all the pollen and dietary groups is, to the average physician and his patient, rather a tedious and bewildering process, and the results not always conclusive to the average professional eye. One is tempted to try a short cut, even if the means used resembles the "shot-gun" type. To this end we have often succeeded by using a combination of mixed respiratory vaccine and a seasonal type of mixed pollen vaccine, such as the vernal Timothy type, or autumnal Ragweed type of Mulford, using .2 in conjunction with .5 to 1. of the mixed respiratory type, about twice a week. Personally, I found this to be effective preparation for vacation trips into the high Sierra. My earlier trips were marred by severe rhinitis and epistaxis. After adopting the precaution of taking two Timothy pollen and mixed respiratory vaccine injections the week prior to my departure, I had no further trouble. The same is true for the susceptible members of my family.

Asthmatic cases are further benefited by asthmolysin of Doctor Kade, or its equivalent of pituitrin and adrenalin, if you prefer. And with this I usually use sufficient x-ray radiation to insure reduction of any congested lymphoid tissue that may be present. The asthma of young children is usually of endocrine type and favorably treated by x-ray and quartz light, but one may combine mixed respiratory vaccine to increase immunity and free them from bacterial sensitivity. The use of a No. 27 sharp needle, and the buttock as a site of injection, usually enables one to gain the child's coöperation.

It appears to be a reasonable conclusion that the practice of using mixed respiratory vaccines lessens the incidence of the common cold, and shortens its duration and danger when it does occur. The incidence and fatality of pneumonia are probably lessened; and reinforced by other measures, these vaccines are of use in the treatment of asthma.

1222 Flood Building.

ACUTE LEUKEMIA*

REPORT OF CASE

By William H. Barrow, M. D.
San Diego

THE acute leukemias constitute a clinical entity of unknown etiology, dramatic in their progress, fatal in their outcome, and with a morphology and pathology that are usually not definitely indicative of whether the condition is myeloblastic or lymphoblastic in origin. The first case of acute leukemia was reported in 1857, and for the next fifty years it was believed that all of the acute leukemias were primarily due to disturbance in the lymphoid tissues and that the large mononuclear cells, which predominate in the blood smears, were immature lymphocytes. More recently, however, there has been a swing of the pendulum and, although hematologists are by no means in accord in their differentiation of the leukemic cells, it is agreed that a very large proportion of the cases are myeloblastic in origin. The disease occurs almost universally in children and in young adults between the ages of twenty and forty. I know of only one case in the literature outside these age limits, Cleveland[1] reporting a case in a man of fifty-five.

There are presented herewith the history and pathologic findings of an acute leukemia in a woman of sixty-five which seems worth reporting because the disease is so uncommon at this age, and because the case demonstrates once more the difficulty in differentiating between the two recognized types of leukemia.

REPORT OF CASE

The patient, concerning whom a report is here made, was an active woman of sixty-five years of age. During the year of 1929, two years before her present illness, she had been under observation for a mild degree of hypertension and arteriosclerosis. One year later she had an attack of acute obstructive jaundice with fever, a polymorphonuclear leukocytosis and right upper quadrant tenderness and spasm. A laparotomy was done and a large abscess in the region of the gallbladder was drained. Convalescence was prolonged but uneventful, except for the fact that three or four months subsequent to the operation she had another mild attack of fever and jaundice, which cleared up promptly. Otherwise there was nothing worthy of note in the past history.

On January 9, 1931, she was seen by her physician for what appeared to be an acute upper respiratory tract infection, with a general malaise, mild pharyngitis, and a temperature of 100 degrees Fahrenheit. For the next week she had an intermittent fever of between 101 and 103 degrees on alternate days, the fever in each case being accompanied by or preceded by malaise and chilliness, and breaking with a fairly severe sweat at night. A white count done on the sixth day was 3,450, and an examination of the blood smear revealed some red cell inclusions that suggested malarial organisms. She was therefore put on quinin

---

* Read before the Los Angeles Clinical and Pathological Society, January 28, 1932.

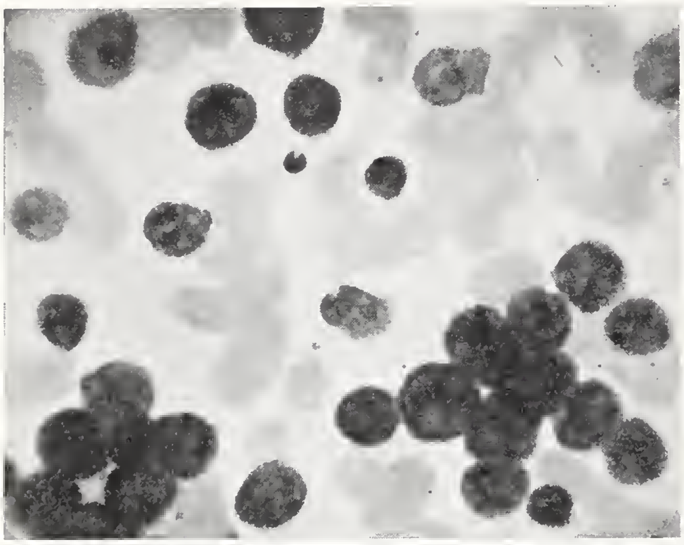


Fig. 1.—Blood smear showing marked predominance of large mononuclear cells which appear mottled because of presence of nucleoli. These cells vary in size and there are some degenerated forms. The field contains one neutrophilic polynuclear and one normoblast. Red cells show variation in size and shape.

for about a week. Her temperature came down to normal, where it remained until the nineteenth day, at which time she had a recurrence of fever and of her throat symptoms. At this time the white count was 8,550, with a preponderance of small mononuclear cells. By the twenty-third day there was a frank pharyngeal inflammation with enlargement of the right tonsil and the clinical appearance of a septic sore throat. The white count at this time had risen to 22,150. This acute throat condition was accompanied by a cervical adenitis, particularly on the right side, but there was not made out at this time or later any general glandular enlargement or splenic enlargement. On February 5, the twenty-seventh day of the disease, there was a marked secondary anemia and a white count of 281,000. The patient was obviously critically ill, suffering great pain and discomfort from her throat and from her general muscular weakness. On the following day she was transferred to the hospital, where she was seen in consultation. Blood counts taken during the next twenty-four hours showed a rapidly increasing anemia and leukocytosis (Fig. 1). Anemia occurring in these cases is secondary in type and due to an infiltration of the hemapoietic tissue by the leukemic cells. The increase in the leukocytes is indicated in the chart (Chart 1), but the differential count as reported is not particularly significant since these blood smears were examined by various technicians and pathologists and the large mononuclear cells which predominated in all the smears were variously called large mononuclears, lymphoblasts, myeloblasts, premyelocytes, and immature lymphocytes. The oxidase stain did not reveal any granulation. The cells are therefore classified in this chart merely as large mononuclears or leukemic cells.

On physical examination the patient was obviously very toxic, the breath was foul, and as an indication of a hemorrhagic diathesis there were a hematemesis and a persistent bleeding from the gums. The tonsils and pharynx were markedly congested and inflamed. As mentioned before, the spleen was not palpable, and other than the moderate cervical adenitis there was no glandular enlargement. The rest of the physical examination was essentially negative. Laboratory investigation, other than the blood, was negative except for a trace of albumin and occasional red blood cells in the urine. Blood chemistry, blood culture, and Wassermann were negative.

During the night the patient was restless and irrational, and about 7 a. m. she became suddenly comatose and developed stertorous breathing. The left pupil was dilated, and there was well-marked choking of the disk. The pulse became weak and somewhat irregular, the respiration later became periodic in character, and she died at 5 p. m., just twenty-nine days from the acute onset of her illness.

At autopsy, examination of the head was not permitted, but from the clinical symptoms it is obvious that the patient died of a cerebral hemorrhage or thrombosis, which so commonly mark the exitus in these cases. The gross postmortem findings were remarkably uninteresting. Outside of a small serosanguinous pleural effusion and an obvious hyperemia of the bone marrow, spleen, liver, and other abdominal organs, the findings were essentially normal. The spleen was normal in size and weight. There was no general lymphatic glandular enlargement or gross adenopathy except in the cervical region, as was noted above.

Photomicrographs of some of the tissues are shown. Unfortunately the preparation of the bone marrow was not suitable for reproduction, but microscopic examination of this tissue showed it to be packed with leukemic cells with a relatively small number of red cells, and with the erythroblastic tissue destroyed. Low and high power magnification of the kidneys (Fig. 2) show both convoluted and collecting tubules filled with mononuclear cells, which have also invaded the connective tissue. A low power magnification of the liver tissue (Fig. 3) shows degeneration of the liver cells and areas where the liver cells have been completely displaced by the leukemic cells. The high power view of the same field shows this in more detail. The high power magnification of the spleen (Fig. 4) shows destruction of the normal splenic architecture and the sinuses packed with leukemic cells.

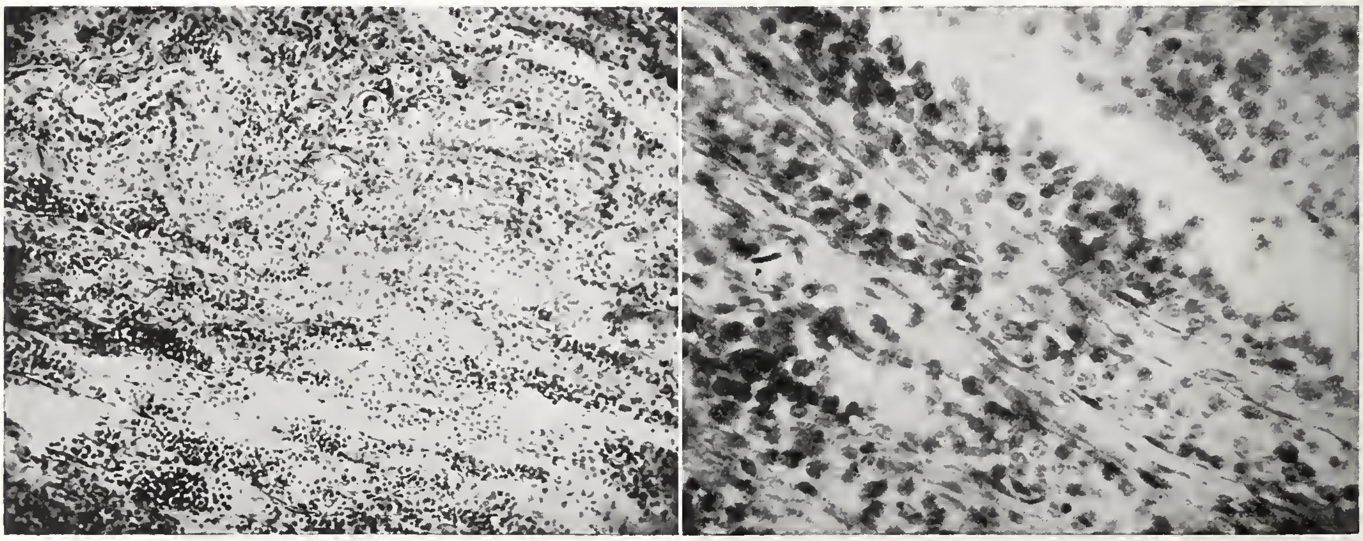


Fig. 2a

Fig. 2b

Fig. 2.—Kidney (low power and high power magnification) showing convoluted and collecting tubules filled with leukemic cells, which have also invaded the connective tissues.

Chart 1.—*Blood Counts. The blood counts show the early subleukemic stage followed by the leukemia. The stained smears in the latter stages show a predominance of the large mononuclear leukemic cells which are not here further classified (see text).*

Date	Hemoglobin	Red Blood Cells	White Blood Cells	Polymorphonuclears	Small Mononuclears	Large Mononuclears and Leukemic Cells
Jan.						
14	....	....	3,450	....	....	....
15	....	....	3,050	9	89	2
27	85	....	6,550	13	71	16
31	....	....	22,150	6	15	79
Feb.						
5	60	1,280,000	281,600	....	8	92
6	55	2,580,000	320,000	3	2	95
7	50	2.620,000	439,000	2	1	97

COMMENT

Clinically and pathologically this case is perfectly typical of acute leukemia of either lymphatic or myelogenous origin. Particularly characteristic were the sudden onset with fever, the general malaise, the bleeding gums, the tonsillitis and cervical adenitis, and the early subleukemic phase of the white count. Cases without general glandular enlargement or splenomegaly such as this, cases with hemorrhage as the outstanding symptom, cases with glandular and splenic enlargement, and cases with only fever, anemia, and hemorrhage—all these variations occur in both myelogenous and lymphatic leukemia in the acute form. This clinical parallelism is pointed out by Ordway and Gorham,[2] as is the difficulty in differential diagnosis from blood and tissue morphology. They mention the fine distinction made between myeloblasts and lymphoblasts, the former having a deeply basophilic protoplasm and an azure-stained nucleus with four or five nucleoli, as compared with the lighter staining protoplasm, darker nucleus and the three or four nucleoli of the latter. Naegeli claims that in the large mononuclear cells, which characterize the blood smear of an acute leukemia, careful staining and close scrutiny will reveal the neutrophilic granulation of the premyelocyte, and it is felt that it is because these cells were not in the past recognized that most acute leukemias were called lymphatic. The mature myelocytes seldom appear in any numbers and a small percentage is found in definite acute lymphatic leukemia. The oxidase stain is positive only in the more mature cells; and when, as in this case, it is negative it does not, therefore, rule out myelocytic leukemia. Finally the hematologists are by no means in accord in the matter. Pappenheim,[2, 3] disputes Naegeli's differentiation, claiming it is impossible in the early stages, both cells, in his belief, springing from a common progenitor, the hemocytoblast. Kwasniewski and Henning stated the differentiation was impossible in some cases, although they found a preponderance of eight cases of myelogenous leukemia to one of lymphatic after a careful hemotologic study of twenty-seven cases.

This difficulty in diagnosis was evident in the case presented here. Blood smears taken at different times in the last three days of the disease were studied by four pathologists. Two of these men

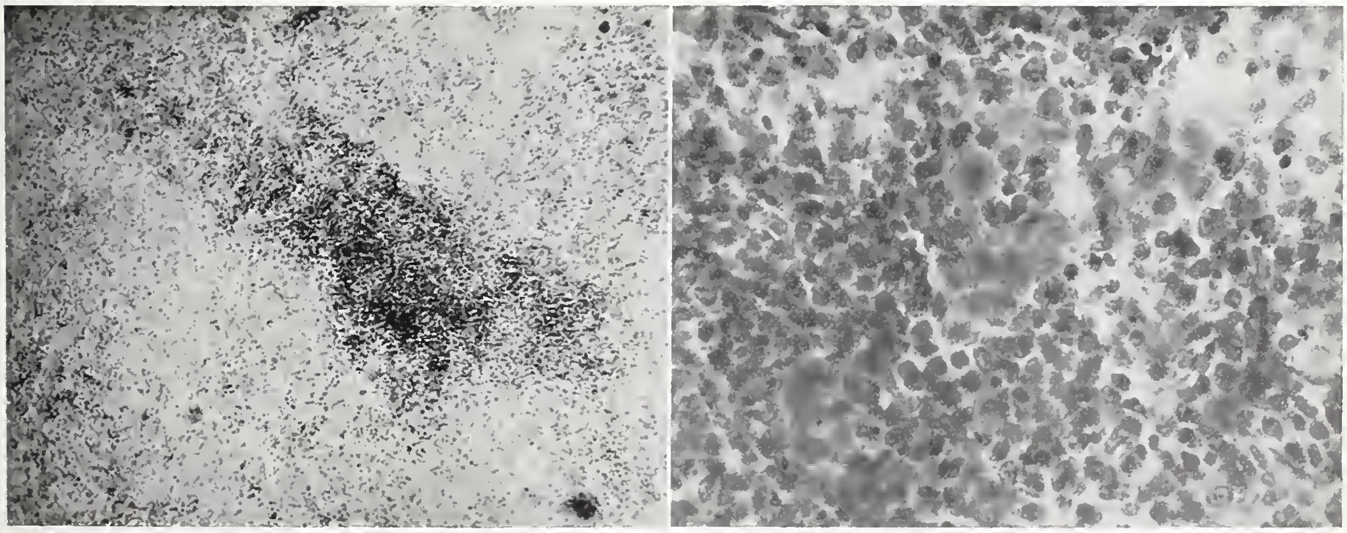


Fig. 3a Fig. 3b

Fig. 3.—Liver (low and high power magnification) showing degeneration of liver cells and areas of infiltration by the leukemic cells.

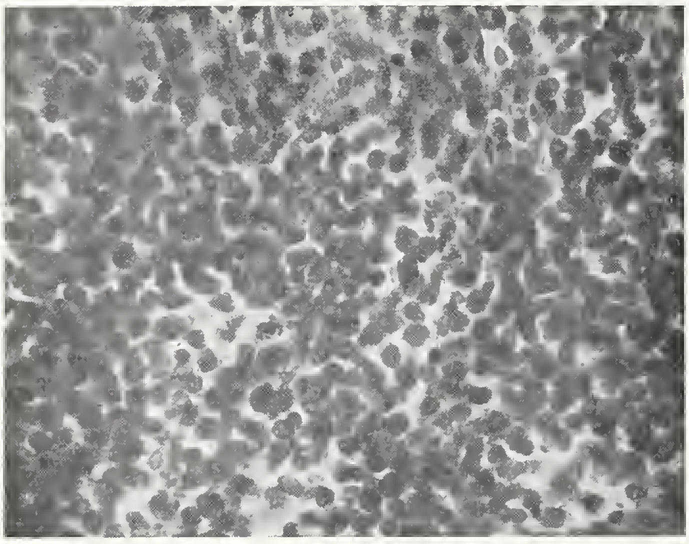


Fig. 4.—Spleen (high power magnification) showing destruction of splenic tissue and infiltration of sinuses with the leukemic cells.

characterized the mononuclears as myeloblastic and two as lymphoblastic. Two of the pathologists also studied the tissue slides and were again divided in their opinion.

Clinically the two diseases, if two there be, are identical and, regardless of whether the primary disturbance is in the bone marrow and spleen or in the lymphoid tissue, the disease as it progresses involves the whole hemapoietic system with the characteristic hyperplasia of the spleen, bone marrow, and lymph tissue.

SUMMARY

Acute leukemias, both myelogenous and lymphatic, are characterized by certain fairly uniform findings. They usually occur in children and in young adults. The onset is acute and the course fatal. The blood shows an early aleukemic or subleukemic stage, followed by the appearance of large mononuclear cells. Some of the clinical manifestations are fever, malaise, pharyngitis, a hemorrhagic diathesis, anemia, and also frequently enlargement of spleen and lymph glands. Pathologically there is hyperplasia of the bone marrow, lymph glands, liver, and spleen with invasion of these and other organs with leukemic cells. The differentiation between the myelogenous and lymphatic types of the disease is not possible unless there is definitely demonstrable the presence or absence of myeloid elements by the oxidase stain or by enzyme tissue reactions.

This case has been reported because of the occurrence of the disease in a woman of sixty-five, which is well outside the usual age limits, and because it demonstrates the difficulty of differentiating between the two forms of the disease in spite of complete hemotologic and pathologic study.

Acknowledgment is made to Dr. W. S. Woolford of the Army Medical Corps for his careful and detailed record of the early stages of the patient's illness, and to Dr. H. A. Thompson for his coöperation in the preparation and study of the autopsy material.

233 A Street.

REFERENCES

1. Cleveland, D. E. H.: Leukemia as a Sequel in Skin Disease, Arch. Dermat. Syph., 20:320-321 (September), 1929.

2. Ordway, Thomas; Gorham, L. W.: Diseases of the Blood, Oxford Monographs, Vol. 9, Chapter 16, 1930.

3. Pappenheim, A., Hirschfeld, H.: Acute Myeloid and Lymphadenoid Macrolymphocytic Leukemia in Two Different Cases, Folia haemat., Berl., 5:347-425, 1908.

Social Insurance in Austria.—Concerning the organization of social insurance in Austria, further details have been announced, from which the following figures have been taken. The many krankenkassen scattered throughout the country may be divided into six groups: (1) industrial workers, with about 1,000,000 members and compulsory insurance; (2) agricultural workers, 300,000; (3) mercantile and private employees, 280,000; (4) government employees, 170,000; (5) employees of transportation companies, including railways, 170,000; and (6) employees of the municipality of Vienna, 45,000, making a total of about 1,965,000 members. Of this number, 100 per cent are insured against disease, but only 60 per cent are insured against loss of employment; that is to say, about 40 per cent are enrolled under family insurance. The average monthly income of members of the krankenkassen is 156 shillings, or about $22; the highest monthly income is only 200 shillings, or about $30. On this basis the insured receives a weekly sick benefit during illness or a lump-sum compensation in case of accident. The members pay two-thirds and the employer one-third of the monthly insurance premiums, which average about 24 shillings, or $3.60. The insured member thus pays from 10 to 13 per cent of his income to the krankenkasse, the maximum figure being 28.50 shillings, or $4.28, for workers. In the case of employees who carry also old-age pension, the monthly premium amounts to about 14 or 15 per cent of the wages received. The total receipts of the krankenkassen in 1931 were 207,000,000 shillings, or $31,050,000, 93 per cent of which sum was expended for insurance benefits, 60,000,000 shillings for medical aid, 30,000,000 for medicines, 41,000,000 for hospital care, and 62,000,000 for sick benefits. For accident insurance, 36,000,000 shillings was received and expended.—*Vienna News Letter, Journal of The American Medical Association,* Vol. 100, No. 21.

Treatment of Pernicious Anemia by Liver Extract.—McHenry and his associates found that liver extract prepared for intramuscular administration is safe, dependable and effective when used in adequate dosage. Administered intramuscularly, a given quantity of extract is much more potent (at least thirty times) than is the same amount given by mouth. The intramuscular administration of the extract from 10 to 20 grams of liver a day is fully as effective as the ingestion of the extract from 250 to 800 grams of liver daily. A good reticulocyte response has been obtained from the single injection of the extract from 50 grams of liver. Intramuscular liver therapy is of great value in the treatment of patients in severe relapse, to whom large doses can readily be given by this method with assurance of an early response. The remission begins about a week sooner than when the extract is administered by mouth. It is also useful in treating patients who refuse to continue to take sufficient amounts of liver or liver preparations by mouth. The intramuscular administration of the extract from 100 grams of liver a week in one or two doses is probably sufficient to maintain most patients with pernicious anemia in a good state of health. It is extremely important, in treatment by oral administration of liver or liver extracts, always to give a sufficient amount, no matter how much may be required, to maintain the patient in good health with no anemia and to prevent the appearance or progression of nervous lesions.—*Canadian Medical Association Journal.*

BEDSIDE MEDICINE FOR BEDSIDE DOCTORS

An Open Forum for brief discussions of the workaday problems of the bedside doctor. Suggestions of subjects for discussions invited.

HUMAN STERILIZATION*

F. O. BUTLER, M. D. (Sonoma State Home, Eldridge).—While the sterilization law of the mentally deficient has been on the statutes of California, since 1909, very few operations were performed prior to 1918.

On January 1 of this year we had sterilized a total of 2,264, which, according to available statistics, is by far the greatest number of sterilizations in any institution of this kind in this or any other country. Considering the number performed in the mental hospitals of the state, California takes the lead in approximately three-fourths of all such operations for sterilization in the United States, which also means probably the majority done in the entire world.

The casual observer might think we sterilize all those in the child-bearing period, but we wish to assure you it is only in selective cases, as will be observed in Table 1, which deals with the total discharges from the institution since the law became effective in 1909.

In this you will note that only 53.8 per cent of the cases discharged were sterilized.

The population at the time the law became effective was 749, while now it is 3,536 enrolled with 2,462 actually in the institution, the balance, 1,074, being on leave of absence from short vacations to several months or years under the supervision of our Social Service Department, consisting of six social workers, which permits us to supervise all those away from the institution as may be required.

Of those discharged, it will be noted that 1,373 out of 1,857 (or 70.3 per cent) made successful adjustment, which we believe is a good percentage, considering so many of them were placed in other institutions, as noted at the foot of the table.

Of the above number discharged, a large proportion are successfully married, the majority with our permission and with the policy of being married for approximately two years before being discharged. Of this number of marriages, their success as to married life, being measured by the number of annulments and divorces, compares favorably with normal individuals. Marriages assist materially in stabilizing the defectives, and we credit considerable of their successful adjustment to successful marriage and we believe they should have this privilege in that they are unable to progagate, owing to the operation before leaving the institution. Some of the higher type have been permitted to have one or more of their children,

TABLE 1.—*Report of Patients Discharged and Sterilized January 1, 1909, to January 1, 1933*

Year	Discharged							Sterilized			
	Successful Adjustment			Unsatisfactory Adjustment			Total Dis-charged				
	Male	Female	Total	Male	Female	Total		Male	Female	Total	Per Cent
1909	12	10	22	2	3	5	27	..	..	..	......
1910	17	10	27	1	6	7	34	..	..	..	......
1911	14	13	27	0	1	1	28	..	..	..	......
1912	11	3	14	3	1	4	18	..	..	..	......
1913	18	9	27	0	4	4	31	..	..	..	......
1914	8	3	11	0	4	4	15	0	1	1	6.6
1915	14	9	23	1	1	2	25	..	..	..	......
1916	17	5	22	0	6	6	28	..	..	..	......
1917	26	10	36	1	2	3	39	..	..	..	......
1918	23	10	33	4	1	5	38	1	2	3	7.8
1919	28	9	37	3	2	5	42	6	4	10	23.8
1920	17	20	37	2	3	5	42	6	11	17	40.4
1921	21	7	28	27	7	34	62	21	11	32	51.6
1922	19	17	36	37	8	45	81	8	14	22	27.1
1923	14	22	36	16	9	25	61	13	18	31	50.8
1924	3	9	12	10	5	15	27	3	10	13	48.1
1925	4	10	14	13	12	25	39	6	16	22	56.4
1926	6	16	22	10	8	18	40	4	15	19	47.5
1927	31	32	63	15	26	41	104	22	45	67	64.4
1928	28	59	88	27	30	57	145	25	58	83	57.2
1929	42	32	74	40	36	76	150	36	57	93	62.0
1930	48	37	85	54	37	91	176	46	53	99	56.2
1931	93	56	149	48	31	79	228	75	66	141	61.8
1932	95	155	250	68	59	127	377	58	158	216	57.3
			1,373			684	1,857			869	

Note: From January 1, 1918, to January 1, 1933, 53.8 per cent of the total number of cases discharged were sterilized.

Unsatisfactory cases include transfers to mental hospitals, Pacific Colony (Home for Feeble-Minded), correctional schools, cases sentenced to penal institutions, those deported or residing outside the state, those not suitable for this institution, those who died on parole, and cases with irregularities of commitment or where the relatives are insistent upon discharge soon after admission.

---

*In the December, 1928, issue of CALIFORNIA AND WESTERN MEDICINE, Vol. 29, No. 6, page 369, will be found an article on "Human Sexual Sterilization," by Suren H. Babington, M. D.

TABLE 2.—*Veneral Infections January 1, 1928, to January 1, 1933*

		Infected Upon Admission		Infected Upon Return from Leave of Absence		Infected Upon Return from Escape	
		Lues	Gonorrhea	Lues	Gonorrhea	Lues	Gonorrhea
1928	Male	0	0	1	0	0	0
	Female	0	18	1	9	0	1
1929	Male	0	0	1	0	0	0
	Female	1	10	2	9	1	1
1930	Male	0	1	0	1	0	0
	Female	0	6	2	14	0	0
1931	Male	0	0	0	1	1	1
	Female	0	1	2	5	0	1
1932	Male	0	1	0	0	0	0
	Female	1	4	3	5	0	0
		2	41=43	12	44=56	2	4=6

Note: The new admissions during above period totaled 1,779. Those returned from leave and escape during above period totaled 3,446. The reason for the low number of infections upon admission is that we request all patients who possibly can be cared for on the outside be cleared up before admission. Infections upon return from leave of absence, in nearly every case, the girl was a sex delinquent before admission to the institution and many listed are reinfections of gonorrhea and are all returned for treatment as soon as found infected.

The question sometimes arises "Does sterilization increase venereal disease?" From Table 2, covering the past five years, you will note that we have had but comparatively few cases who contracted either gonorrhea or syphilis while on leave of absence or escape. Many of these were reinfections and were sex delinquents before admission. While those returning infected are slightly more than those on admission, yet we have a definite policy in asking that all cases be cleared of infection before admission, while those on leave of absence we return to the institution immediately for treatment after either new or reinfection. Considering that out of 3,446 returns to the institution from leave of absence and escape there were but sixty-two, or 1.8 per cent, and of the admissions of 1,779 with but forty-three, or 2.42 per cent, infected, it is quite plain that venereal disease plays but a very little part and certainly disproves the theory that sterilization increases venereal infection. While only a slight difference, yet it shows the percentage of infections on admisison and before sterilization is more than those returning to the institution for any reason following sterilization.

which were born before admission. It makes for a very happy home, although they are not able to have additional children. The vast majority, however, do appreciate and are glad they cannot have more children, realizing their inability to properly care for them. The great majority of the mentally deficient do well to support themselves, even under guidance, without the added responsibilities of having children to support.

Of those discharged during the past five years in satisfactory adjustment, unsatisfactory adjustment, sterilized group, and epileptic group, we show in Table 3 their intelligence quotients, which ranges from 58.78 in the satisfactory group to 62.67 in the sterilized group, which is in the range of the middle moron.

TABLE 3.—*Median I. Q. Discharges from January, 1928, to January, 1933*

Intelligence Quotient	Satisfactory Adjustment	Unsatisfactory Adjustment	Sterilized Group	Epileptic Group
	F	F	F	F
130-139	0	1	0	0
120-129	0	0	0	0
110-119	0	4	1	1
100-109	3	13	5	16
90-99	30	14	20	6
80-89	81	55	73	27
70-79	164	73	148	23
60-69	258	145	255	32
50-59	209	156	221	35
40-49	120	89	113	31
30-39	35	38	24	14
20-29	30	33	6	9
10-19	18	14	2	7
0-9	11	13	0	4
N	959	648	868	205

N—Number
F—Frequency

Median	I. Q.
Satisfactory	62.2
Unsatisfactory	58.78
Sterilized	62.67
Epileptic	60.78

These are the type that usually produce the most children, and naturally the vast majority of their offspring is defective. Our experience is quite conclusive that this type marry about their own mental level, and this kind of mating rarely brings forth anything but mentally deficient offspring, many of whom are lower mentally than either parent.

At the present time there are twenty-five states and four foreign countries with sterilization on their statutes. We are glad to report, however, that other states and countries are giving the matter very serious consideration. By the material aid of organizations, such as the Human Betterment Foundation † of Pasadena, headed by E. S. Gosney, philanthropist and founder, we are hopeful that such laws will get on the books of the remaining twenty-three states of the Union and all the civilized countries in the world. From our actual experience over many years, it would seem that everything points in favor of giving these individuals this protection against parenthood, and the longer we are in this work the more we advocate eugenical sterilization for the protection of society and the furtherance of human betterment.

* * *

L. L. STANLEY, M. D. (Medical Department of San Quentin Prison, San Quentin).—In theory the proper thing to do for the criminal is to sterilize him so that he will not reproduce his kind.

---

† Editor's Note.—Excerpts from a publication of the Human Betterment Foundation immediately follow this article.

But who and what is the criminal? Is he the man who, at the age of fifty-five, wrecks a bank, despoils a large utility company; the man at forty who passes fictitious checks in order to live without work; the youth of twenty who, at the point of a gun, commits a holdup to secure funds; or the man of any age who does someone to death for gain or in the heat of passion? He is all of these and more.

Would sterilizing these men reduce crime? It probably would not. The fifty-year banker has already produced his brood, as has the check passer, perhaps. The young robber would not be interested in offspring when he gets out of jail.

But 20 per cent of the state prisoners may be classified as feeble-minded. In these cases sterilization would be as beneficial as it has proved to be in the homes for the feeble-minded.

But the law does not provide for this procedure. California Statutes, 1913, page 775, Act 539, General Laws, provides as follows:

"Section 2. Whenever in the opinion of the resident physician of any state prison it will be beneficial and conducive to the benefit of the physical, mental or moral condition of any recidivist lawfully confined in such state prison, to be asexualized, then such physician shall call in consultation the general superintendent of state hospitals and the secretary of the State Board of Health, and they shall jointly examine into the particulars of the case with the said resident physician, and if in their opinion or the opinion of any two of them asexualization will be beneficial to such recidivist, they may perform the same; provided that such operation shall not be performed unless the recidivist has been committed to a state prison in this or some other state or country at least two times for rape, assault with intent to commit rape, or seduction, or at least three times for any other crime or crimes, and shall have given evidence while an inmate of a state prison in this state that he is a moral or sexual degenerate or pervert; and, provided, further, that in the case of convicts sentenced to state prison for life, who exhibit continued evidence of moral and sexual depravity, the right to asexualize them, as provided in this section, shall apply whether they shall have been inmates of a state prison in this or any other country or state more than one time or not; provided, further, that nothing in this act shall apply or refer to any voluntary patient confined or kept in any state hospital of this state."

It can be readily seen that this section is so encumbered with provisos that it cannot be used. At San Quentin, in the past twenty years no prisoner has been found to whom this law could be applied.

Section 645 of the Penal Code provides as follows:

"Whenever any person shall be adjudged guilty of carnal abuse of a female person under the age of ten years, the court may, in addition to such other punishment or confinement as may be imposed, direct an operation to be performed upon such person, for the prevention of procreation."

But in this statute the matter of constitutionality has been brought up. It is contended that vasectomy is unconstitutional in that an operation for the prevention of procreation is a cruel punishment, prohibited by an article of the state constitution which directs that "excessive bail shall not be required, excessive fines imposed, nor cruel punishment inflicted." Be that as it may, this statute has not been enforced in California. No operations for asexualization of criminals have been ordered or authorized at the State Prison in the past twenty years.

During this period, however, not more than ten prisoners have had vasectomy performed, all on their own written request. Their reasons for submitting have been various: the desire to prevent procreation of their kind; the wish to spare their wives of childbirth when freedom is obtained; and the hope that the operation might benefit their health. The latter consideration has been motivated by the reported benefits of the so-called Steinach operation. In this procedure the vas is cut. The end next to the testicle is crushed and tied. It is claimed that the seminiferous tubules atrophy by pressure and disuse. The interstitial cells, on the other hand, hypertrophy because of the extra blood supply which goes to them rather than to the spermogenetic cells. As the former cells are thought to influence the individual's vigor and vitality, their hypertrophy would increase these qualities.

The professional criminal is by no means a family man. The creation of offspring after he has served his imprisonment is rare and usually accidental.

What, therefore, might seem to be the proper thing to do in theory would probably not be of any great value in practice.

* * *

HUMAN STERILIZATION*

Strong, intelligent, useful families are becoming smaller and smaller. Irresponsible, diseased, defective parents, on the other hand, do not limit their families correspondingly. There can be but one result. That result is race degeneration.

The law of self-preservation is as necessary for a nation as for an individual.

When families that send a child to an institution for the feeble-minded average twice as large as families that send a child to the university, it is time for society to act.

What Can Be Done?—There is one outstanding, practical, humane measure which, properly administered, will go far to change this trend toward human deterioration.

This measure is the sterilization, by a harmless surgical operation, of men and women who are so seriously defective that, for the protection of themselves and their families, of society and of posterity, they should not bear and rear children.

This measure is not a novelty. It has back of it a whole generation of successful application. But, because of the lack of general knowledge concerning it, there still exists, even among educated people, a great deal of misinformation and misunderstanding about it. Such ignorance is the main obstacle in the way of necessary extension of this humanitarian measure.

---

* A publication of The Human Betterment Foundation, Suite 321, Pacific Southwest Building, Pasadena.

The purpose of this pamphlet is to tell briefly what eugenic sterilization is and what it is not; to describe the results to individual and community as demonstrated by a critical study of 6,000 operations, mostly in California, extending over a period of twenty years.

Not Punishment, But Protection.—Let this be fully understood at the outset: sterilization, as considered in these pages, removes no organs or tissues from the body, interferes with no blood or nerve supply, produces no physical change. It merely cuts and seals the tubes through which the germ cells—the spermatozoa and ova—must pass if conception is to result. *It does not in any degree unsex the individual,* except in making parenthood impossible. Such a result should be and, in the great majority of cases, is welcomed by the persons who are sterilized because it is performed only in cases where parenthood is manifestly undesirable from every point of view.

Sterilization is not a punishment, but a protection. It carries no stigma or humiliation. It is a humane measure designed to meet the best interest of all concerned, and for this purpose there is no known measure that can take its place. . . .

Patients Are Pleased.—The patients sterilized in the California institutions were found in six cases out of every seven to be satisfied with the operation and the results. The exceptions were only such as would be expected in a group of persons who had gone through severe mental illness. . . .

Homes Are Protected.—In no case has the operation broken up a home or disturbed a family relationship. On the contrary, case after case might be cited in which sterilization has been responsible for keeping a family together and allowing the patient to remain in his own home instead of spending the rest of his life in an institution. . . .

A canvas of the medical officers, probation officers, parole authorities, and social workers of the state who have had close observation of the workings of California's eugenic sterilization law disclosed that they are virtually unanimous in its support, holding it to be desirable in principle and satisfactory in practice. The criticism most frequently voiced by them is that it is not applied more widely. While nearly all of the feebleminded are sterilized before release from state institutions in California, only one in twelve of the insane has been sterilized during the life of this law.

What Happens Afterward.—Careful follow-up of the feeble-minded patients paroled after sterilization shows that two-thirds of them have made good outside of the institution. Failures have been due to lack of intelligence or to temperamental defects, for the most part. . . .

The Need.—Experience everywhere demonstrates that the successful application of eugenic sterilization depends largely on an educated public opinion and the conservative administration of sound laws.

The need for conservative, sympathetic, and discriminating use of such a measure in selected cases has been widely recognized as imperative since research began to bring forward more exact facts about the problem which confronts the American people.

Careful studies indicate that there are 6,000,000 in the United States who have been, are now, or at some time will be legally committed as insane to state institutions. The number who suffer from equal mental disease sufficient at some time to incapacitate them for work, but who are never legally declared insane, is about as great, making 10 per cent of the population or 12,000,000 persons subject to mental disease in one of its most serious forms.

But these 12,000,000 mentally diseased persons are not the whole story. There are 6,000,000 additional who, though not mentally diseased, are so deficient in intellect, with an endowment in this respect that is more than 30 per cent below the average, that they are often described as feebleminded.

Such handicapped persons are subject to exploitation, likely to get into difficulties with law enforcement officers, and certain to contribute more than their quota to the ranks of delinquency and crime, and much more to those of dependency and pauperism. . . .

America's Burden.—This, then, is the situation which America faces now: 18,000,000 persons who are or at some time during life will be burdened by mental disease or mental defect, and in one way or another a charge and tax upon the rest of the population.

It challenges every thoughtful person. . . .

The Law in Twenty-Seven States.—Twenty-seven states in the Union now have eugenic sterilization laws on their statute books. They are as follows, with the year in which the first law was adopted:

Alabama	1923	Nebraska	1915
Arizona	1929	New Hampshire	1917
California	1909	North Carolina	1929
Connecticut	1909	North Dakota	1913
Delaware	1923	Oklahoma	1931
Idaho	1925	Oregon	1917
Indiana	1907	South Dakota	1917
Iowa	1911	Utah	1925
Kansas	1913	Vermont	1931
Maine	1925	Virginia	1924
Michigan	1913	Washington	1909
Minnesota	1925	West Virginia	1929
Mississippi	1928	Wisconsin	1913
Montana	1923		

Many of the states have made little use of these laws. This has been chiefly due to a lack of public education as to the need for such a measure; partly to the fact that some of the earlier laws were badly drawn and not easily workable. . . .

The Human Betterment Foundation, 321 Pacific Southwest Building, Pasadena, will gladly aid those interested in legislation, to get full information on this subject. It has published all the facts available, both historical and experimental, on eugenic sterilization, regardless of whether favorable or unfavorable to any individual's claims or expectations. It is concerned with education, *Operations for Eugenic Sterilization Performed in State Institutions Under State Laws Up to January 1, 1933*

State	Male	Female	Total
Alabama	73	58	131
Arizona	10	10	20
California	4,423	4,081	8,504
Connecticut	18	320	338
Delaware	181	115	296
Idaho	4	9	13
Indiana	159	58	217
Iowa	56	38	94
Kansas	588	388	976
Maine	5	36	41
Michigan	264	819	1,083
Minnesota	72	621	693
Mississippi	1	11	12
Montana	33	48	81
Nebraska	94	135	229
New Hampshire	23	142	165
New York	1	41	42
North Carolina	10	36	46
North Dakota	56	37	93
Oklahoma	0	0	0
Oregon	296	586	882
South Dakota	55	84	139
Utah	44	41	85
Vermont	8	22	30
Virginia	479	854	1,333
Washington	6	24	30
West Virginia	0	1	1
Wisconsin	40	452	492
Total	6,999	9.067	16.066

Note.—The above figures are furnished by state authorities.

not with propaganda. It is not advocating any particular law for any particular state, but urging citizens everywhere to inform themselves and make up their own minds as to the issues involved; to adopt sound and workable laws and to amend those that are out of date or badly drawn.

* * *

VOLUNTARY STERILIZATION IN GERMANY

As times change, opinions change, and that applies also to medicine. In a recent letter (*The Journal of the American Medical Association,* August 27, 1932, p. 774) mention was made of a legal action in which the question of sterilization was involved. But now the medical syndical organizations of Germany—the Deutscher Aerztevereinsbund in association with the Hartmannbund—have petitioned the federal ministry of the interior to draft, at the earliest possible moment, a federal law permitting and regulating sterilization on eugenic grounds. Sterilization would of course always be contingent on the consent of the patient or his legal representative. The medical profession of Germany expressed itself as opposed to compulsory sterilization.

The subject of eugenics and sterilization is to be discussed at length at the next Deutscher Aerztetag (1933), after the preliminary work has been done.

According to existing laws, eugenic sterilization is punishable as unauthorized bodily injury. At first, an endeavor was made to have a paragraph inserted in the Penal Code that would provide for exceptions to the law. What is now desired is not an exception to the law, but that special legislation be enacted that will legalize, for the public welfare, what has heretofore been prohibited.

Sterilization would be permitted only with the consent of the person concerned or the legal guardian, and then only in case a commission appointed by the chief authorities in each *land* shall give its approval. This commission would consist of a judge and two physicians, one of whom should be familiar with the "laws" affecting hereditary transmission in man. The decision of the commission would include the reasons for consenting to or refusing the sterilization. The written decision would be transmitted to the petitioner and a copy would be filed with a specially designated registrar. The physician who undertakes such an operation would also file with the registrar a short statement setting forth his reasons for the operation. Only a physician licensed to practice in Germany would be permitted to perform sterilization. The commission would impose no fees on the person to be sterilized. In the case of indigent persons, costs of the operation would be met by the welfare department. All persons having knowledge of the operation would be pledged to secrecy.

For eugenic sterilization, the persons to be considered are: those suffering from hereditary mental disease, mental weakness, epilepsy or any other hereditary disease, or who have morbid hereditary predispositions, if, according to the teachings of medical science, severe bodily or mental hereditary taints are extremely likely to develop in their offspring. The legislation will not consider the social indications for sterilization, as was feared by many, nor will it deal with the medical indications, which have to do with warding off a menace to life. Sterilization on the basis of recognized medical indications is permitted by the present Penal Code. The bill that is being proposed has to do with the welfare of the human race, whereas the social and the medical indications concern the welfare of individuals.

Humanity as a whole suffers constantly from the fact that the procreation of persons with sound hereditary characters is not sufficient to preserve its own numbers, whereas families with severe hereditary taints are propagated without check. It is difficult to restrict the propagation of persons with unsound hereditary characters. Such restriction is absolutely necessary for economic reasons; for the number of persons with serious hereditary taints, who become criminals or a burden to the public, is increasing. A diminishing number of persons capable of earning a living has to provide for an increasing number of economic incompetents. More than $25,000,000 annually, and probably twice that sum, if everything is considered, is needed for institutional and welfare care of incompetents, whereas persons of sound body and mind suffer in large numbers for the lack of necessaries of life. The prevention of propagation among incompetents by permanent segregation in institutions is economically impossible, so that no other way is left than the elimination of their procreative power.—Berlin *News Letter. (Journal of the American Medical Association,* Vol. 100, No. 13.)

California and Western Medicine
Owned and Published by the
CALIFORNIA MEDICAL ASSOCIATION
Official Organ of the California and Nevada Medical Associations
FOUR FIFTY SUTTER, ROOM 2004, SAN FRANCISCO
Telephone Douglas 0062
Address communications to the EDITOR, as per the above address.

EDITOR . . . . GEORGE H. KRESS
Associate Editor for California . . . . EMMA W. POPE
Associate Editor for Nevada . . . . HORACE J. BROWN

Advertising Representative for Northern California . . . . L. J. FLYNN, 544 Market Street, San Francisco

Subscription prices, $5.00 ($6.00 for foreign countries); single copies, 50 cents.

Volumes begin with the first of January and the first of July. Subscriptions may commence at any time.

Change of Address.—Request for change of address should give both the old and the new address. No change in any address on the mailing list will be made until such change is requested by county secretaries or by the member concerned.

Advertisements.—The journal is published on the seventh of the month. Advertising copy must be received not later than the 15th of the month preceding issue. Advertising rates will be sent on request.

Responsibility for Statements and Conclusions in Original Articles.—Authors are responsible for all statements, conclusions and methods of presenting their subjects. These may or may not be in harmony with the views of the editorial staff. It is aimed to permit authors to have as wide latitude as the general policy of the journal and the demands on its space may permit. The right to reduce or reject any article is always reserved.

Contributions—Exclusive Publication.—Articles are accepted for publication on condition that they are contributed solely to this journal.

Leaflet Regarding Rules of Publication. — California and Western Medicine has prepared a leaflet explaining its rules regarding publication. This leaflet gives suggestions on the preparation of manuscripts and of illustrations. It is suggested that contributors to this journal write to its office requesting a copy of this leaflet.

EDITORIALS[*]

CALIFORNIA'S NEW CLINIC LAW

Title of California Clinic Bill.—In the Miscellany department of this number of CALIFORNIA AND WESTERN MEDICINE appear the opinion and interpretations of the Hon. U. S. Webb, Attorney General of the State of California, on certain phases of California's new clinic statute (Assembly Bill No. 1277, Chapter 765, approved by Governor James Rolph, Jr., June 5, 1933). The title of this measure reads as follows:

> "An act defining clinics and dispensaries, providing for the operation, conduct, maintenance, examination and regulation thereof, requiring permits therefor, providing for the issuance and revocation of such permits by the State Board of Public Health, fixing the amount of and providing for the collection and disposition of annual fees for such permits, creating the clinic and dispensary fund, prescribing the powers and duties of the State Board of Public Health and of the Director of Public Health in reference to such clinics and dispensaries, and prescribing penalties for the violation of the provisions of this act."

* * *

State Board of Health to Supervise the Clinics.—When Governor Rolph signed this new statute, the Board of Public Health of California, at its first subsequent meeting, placed the item on its docket for consideration. Letters were also sent to members of the California Medical Association who had been especially interested in the passage of the measure, asking for suggestions regarding fees to be charged, and so on. It early became evident to the State Health Board that it was desirable to secure from the Attorney General an opinion on some of the provisions of the Act, concerning which differences of opinion in interpretation might easily arise. A letter formulating such queries was thereupon dispatched by the board; and the reply of the Attorney General is printed on page 214 of this issue.

* * *

State Attorney General Webb's Opinion.—A perusal of Attorney General Webb's opinion reveals how difficult it is to secure the enactment of laws in such simple and direct form that confusion and controversy do not come into question. It must be remembered that the Act as passed, owing to amendments, is quite different in parts from the original draft, as first drawn up by Dr. John Ruddock of Los Angeles and as submitted to the legislature through the California Medical Association Department of Public Relations.

This clinic law is something comparatively new and, like our medical practice acts in the stages of their beginning, may need considerable modification to make it elastically workable and fully practicable.

With the advice, however, which Attorney General Webb and his deputy, Lionel Browne, Esq., have submitted, it will now become possible for the State Board of Public Health to devise ways and means to put the Act into operation. But it is unfortunate that the licensing fee for all clinics is held to the minimum $5, because this small sum will probably not be sufficient to create a fund through which the various provisions of the Act may be adequately carried out. Section 5 states:

> " . . . All existing clinics and dispensaries as herein defined, other than those maintained, conducted and operated by the United States of America, or any department, official, or agency thereof, or clinics maintained by employers without profit for the sole benefit of their own employees, or research clinics working under nonprofit foundation registered with the United States government for tax exemption shall make written application as herein provided for such permit within ninety days from and after the date when this Act goes into effect. Application for permit must be made annually by every such person, firm or corporation maintaining, conducting and operating a clinic and dispensary other than the United States of America or any department, official or agency thereof, or clinics maintained by employers without profit for the sole benefit of their own employees, or research clinics working under nonprofit foundation registered with the United States Government for tax exemption."

* * *

When the Clinic Law Becomes Operative.—This Act, having been signed by Governor James Rolph, Jr., on June 5, by special legislative action, became a law on August 21, 1933. According to the provision in Section 5, just quoted, every clinic, other than those specified, must make written application for a license to operate within ninety days, or before December 5. The opinion of the Attorney General on whether clinics must pay the $5 license fee (which he states is the only fee that the State Health Board is legally authorized to demand) for the remaining time in the calendar year 1933 has not yet been received by the board. Whether the board can legally spend other state funds for postage, and print the necessary form blanks upon which clinics are required to make applications for licenses, is also a question still to be passed on. But in any event, the State Board of Health is willing and anxious to put the new law into force as promptly as possible, in so far as the California Department of Finance permits it to act, and to carry out the various provisions of the Act as fully as the moneys received will permit. If deficiencies exist in the new law, they can probably be rectified at the next session of the Legislature.

---

[*] Editorials on subjects of scientific and clinical interest, contributed by members of the California Medical Association, are printed in the Editorial Comments column, which follows.

TWO PAPERS OF SPECIAL INTEREST

Blood Transfusion as Described by Elsholtz.—In the June California and Western Medicine (page 432) was printed the first of a series of translations of the folio entitled "Clysmatica Nova" from the pen of Johann Sigismund Elsholtz (1632-1688). Elsholtz' work was printed in 1665. The last of the four articles, which are translations by Ethel Gladstone of the University of California Medical School Library, is printed in the Lure of Medical History department of our current number. Attention is called to this dissertation because of the pleasure to be derived from reading the viewpoints of Elsholtz as expressed by him almost three hundred years ago, and also because it is a good discipline for medical men at all times to be reminded of the studies of those who preceded them, and who, with far less of actual scientific and medical knowledge, were yet able to observe keenly, and to think and proceed clearly in their investigations. When physicians of the present generation take into consideration how comparatively recent is the general use of intravenous medication, and how bold seemed the advice for its general use, then the theory and application of intravenous medication, as brought out by Elsholtz in 1665, must indeed appeal as little less than courageous. Readers of California and Western Medicine who do not avail themselves of the opportunity of reading Gladstone's translation of Elsholtz' almost forgotten work, are denying themselves a rare treat.

* * *

Human Sterilization.—Another very interesting paper in the current issue is the Bedside Medicine article on "Human Sterilization." The contribution of Doctor Butler of Sonoma State Home shows how much has been done by California in this method of treatment of human beings who are mentally defective. The excerpts from one of the publications of the Human Betterment Foundation, also a California institution, shed additional light on phases of this new work which, as time goes on, will probably be accepted more and more as proper treatment, materially aiding the prevention of an overplus of defective citizens who, if not requiring institutional care calling for enormous sums of money, certainly add little that makes for a higher standard of human beings, either physically or mentally. The symposium and the appended data should provoke stimulating thought and additional discussion; for physicians, because of the nature of their profession, must have more than a passing interest in such matters.

PERSISTENT PROPAGANDA

A Newspaper Defense of Fellom's Dog-Pound Bill. — Some excellent criticisms of antivivisectionists and their methods were outlined by Chester Rowell, Esq., in the article reprinted in the May California and Western Medicine (page 352). In the number for June (page 475) the legislative battle over Senate Bill No. 674 (Fellom) was described by Dr. Junius B. Harris of Sacramento in his report of the California Medical Association Committee on Public Policy and Legislation. Those presentations speak for themselves, and should appeal to all clear-thinking citizens.

The die-hard character of the antivivisectionists and their supporters, on the other hand, is brought into excellent relief by an editorial in the San Francisco *Examiner* of August 7, a perusal of which shows why an educational campaign is necessary if the propaganda that is seemingly based on mawkish sentimentalism over certain of the lower animals is to be properly counteracted. How and why a great metropolitan daily should give space to the editorial printed below, is something which members of the medical profession find most difficult to understand. The writer for the *Examiner* who penned these editorial paragraphs should read Chester Rowell's comments and then stop, look, listen, and think, before he again contributes a similar effusion to his newspaper. The article referred to, follows:

"DOG-BOOTLEGGING"

"By its failure to pass the Fellom Humane Pound Bill, the State Assembly at its recent session played directly into the hands of a new and atrocious racket.

"The measure was proposed by Senator Fellom to protect pet animals taken to the public pounds and to give their owners full opportunity to recover the impounded animals. One of its chief purposes was to prohibit the traffic in dogs as now practiced by 'dog-bootleggers.' These men, sometimes surreptitiously, sometimes in collusion with pound-masters, make a business of obtaining unclaimed dogs from pounds and selling them to research laboratories. The bill would have provided that such pet animals could not be sold under those circumstances.

"It is curious that Assemblyman Frank L. Crist of Santa Clara County, in which Stanford University is located, was the member who blocked the passage of the bill in the lower house by a parliamentary device. Whether Crist acted deliberately or not, he certainly played into the hands of the 'dog-bootleggers' ' racket, and his constituents should realize the result of his actions.

"Pet animals, at least, should be protected from this traffic by this humane pound measure. The bill had the support of all humane persons. That an Assemblyman in whose district is situated such a culture center as Stanford University should have been the means of halting its passage is difficult to understand."

EDITORIAL COMMENT[*]

ALLERGIC INACTIVATION OF DIPHTHERIA ANTITOXIN

VIII[†]

Nine years ago it was shown by Doctor Opie[1] that foreign proteins injected subcutaneously into homologously hypersensitive rabbits are precipitated or otherwise fixed in the local tissues, no appreciable absorption taking place into the blood stream. At the time, this was regarded merely as an interesting grammatical paradox, a local tissue hypersusceptibility functioning as a specific bodily defense. That this phenomenon is of direct clinical significance, however, is currently alleged by Doctor Kahn[2] of the University of Michigan, who found that, under certain conditions, local allergic fixation of diphtheria antitoxin completely prevents its specific therapeutic action.

Doctor Kahn's allergic studies were made on rabbits previously sensitized to horse proteins, with normal and heterologously sensitized rabbits as the controls. He found that 50 MLD of diphtheria toxin injected intracutaneously into half-grown rabbits invariably causes death in from two to four days. Simultaneous injection of 50 units of diphtheria antitoxin into another cutaneous area almost invariably prevents all demonstrable toxic action. The same antitoxin dose, however, injected into rabbits previously sensitized to horse protein is without this antitoxin effect. All allergic rabbits thus treated died as promptly as the untreated normal or heterologously sensitized controls, autopsies showing typical diphtheria toxin lesions of the adrenal glands.

Doctor Kahn believes that his study "throws light on conditions one frequently meets in children exposed to diphtheria who, after receiving diphtheria antitoxin for passive immunization, contract this disease some weeks later and are then given antitoxin intramuscularly. A severe local inflammatory response usually follows. The results . . . indicate that these children . . . do not derive any curative benefit from the antitoxin, since this reagent undoubtedly remains fixed at the point of injection."

Whether or not routine "desensitization" of his horse-protein-hypersensitive rabbits would render subsequent antitoxin injections therapeutically effective, has not yet been tested by Doctor Kahn.

Stanford University.

W. H. Manwaring,
Palo Alto.

---

[*] This department of California and Western Medicine presents editorial comment by contributing members on items of medical progress, science and practice, and on topics from recent medical books or journals. An invitation is extended to all members of the California and Nevada Medical Associations to submit brief editorial discussions suitable for publication in this department. No presentation should be over five hundred words in length.

[†] Part I of this series was printed in the February California and Western Medicine, page 116; Part II in March, page 188; Part III in April, page 275; Part IV in May, page 380; Part V in June, page 447; Part VI in July, page 59; Part VII in August, page 133.

[1] Opie, E. L.: J. Exp. Med., 39:659, 1924.

[2] Kahn, R. L.: Proc. Soc. Exper. Biol. and Med., 30:613 (Feb.), 1933.

THE LIMITED VALUE OF THE INFORMATION OBTAINED BY A BLOOD CALCIUM DETERMINATION

The note by G. F. Norman[1] in the May number of California and Western Medicine offers an excellent illustration of the limited value of the total serum calcium determination alone in evaluating diseased states. Since the very limited usefulness of the serum calcium determination is not clearly understood by many physicians, it will be useful to briefly outline the essential facts involved.

In other publications[2] the authors have pointed out that the calcium of the blood serum exists in several chemical states. Two of these chemical fractions are separable by ultrafiltration into what is commonly termed the diffusible calcium and the nondiffusible calcium. Of these forms, only the calcium determined in the diffusible fraction is a measure of the physiologically available calcium for the control of neuromuscular irritability. The nondiffusible calcium, which is combined with the blood proteins, is quite inert in this respect. The level of the nondiffusible calcium and, therefore, also the level of the total calcium (the total calcium is the calcium ordinarily determined by the routine laboratory procedure) varies with the content of the serum proteins, more particularly the albumin. The level of the blood calcium then may be reduced because of hypoproteinemia. A noted illustration of this occurs in nephrosis, but a hypoproteinemia is by no means limited to this disease and is far more common than has hitherto been suspected. This is well brought out in a recent paper by Moschcovitz.[3]

Considering, therefore, the complexity of the states of the serum calcium, and the relation of the total calcium and particularly the variation of the nondiffusible calcium fraction with the level of the proteins, it becomes obvious that a simple analysis of the total blood calcium offers practically no information of value in suspect cases of hypocalcemic tetany. If the total blood calcium is slightly lowered, as in Norman's reported cases, it might be so due to a hypoproteinemia rather than to a tetanic phenomenon. If it is normal, it does not rule out the cause of neuromuscular hyperirritability.[*] To accurately determine the relationship of calcium to tetanic manifestations, it becomes necessary to either determine the level of the diffusible calcium directly or alternatively to rule out hypoproteinemia by a serum protein analysis along with the calcium determination.

From a knowledge of these pertinent facts certain deductions can be drawn regarding the significance of the blood calcium determination.

1. A total serum calcium analysis (normal variations 9.0 to 12.0 milligrams per cent) by itself

---

[1] Norman, G. F.: A Type of Migraine Associated with Hypocalcemia, Calif. and West. Med., 38:381 (May), 1933.

[2] The Diffusible Calcium of the Blood Stream. I to V. Arch. of Int. Med., 45:983 (June), 1930; 46:67, 72 (July), 1930; 47:660 (April), 1931; 50:855 (December), 1932.

[3] Moschcovitz, E.: Hypoproteinemia, J. Am. Med. Assn., 100:1086 (April 8), 1933.

[*] The authors have shown that a diffusible calcium of 3.5 milligrams per cent or less is associated with clinical symptoms of active neuromuscular hyperirritability. This phenomenon can be present even when the total calcium is as high as 10.0 milligrams per cent. The lowered level of calcium in such an instance is reflected only in the diffusible calcium, which is very low.

is of no diagnostic value. *Do not order a total calcium analysis without a simultaneous determination of the serum proteins.* The calcium might be low due to hypoproteinemia.

2. *A lowered total calcium value, i. e., below 9.0 milligrams per cent accompanied by a lowered value for serum proteins* indicates a lowered calcium due to hypoproteinemia. This is present in such conditions as nephrosis, nephritis with protein loss, starvation, pregnancy, etc. The diffusible (and presumably the ionic) calcium fractions are, therefore, normal, and muscular hyperirritability due to hypocalcemia does not exist.

3. *A low serum calcium level with normal serum proteins* indicates a loss of diffusible calcium, and in such conditions neuromuscular hyperirritability may be attributed to a hypocalcemia.

4. *A normal value for serum proteins and calcium within normal limits* is presumptive evidence of a normal distribution of the calcium fraction and a calcium deficiency probably does not exist. However, if neuromuscular irritability exists, *determine the diffusible calcium if you want to be certain of the calcium deficiency. If the diffusible calcium is above 4.2 milligrams per cent, the hyperirritability cannot be attributed to a calcium deficiency.*†

We may state for the information of those interested in the chemical procedures that simple methods for the determination of the proteins in the blood and for the analysis of diffusible and nondiffusible calcium have been published by the authors.[4, 5] The chemical manipulation involved in these methods are within the capacity of the equipment of the average clinical laboratory.

Division of Biochemistry,
University of California Medical School, Berkeley.
913 Pacific Mutual Building.

David M. Greenberg,
Berkeley.

Lewis Gunther,
Los Angeles.

---

† Normal limits of diffusible calcium are 4.5 to 6.2 milligrams per cent. Latent tetany usually lies within the zone of 3.5 to 4.2 milligrams per cent, manifest tetany when the level is below 3.5 milligrams per cent.

[4] Greenberg, D. M.: The Colorimetric Determination of the Serum Proteins, J. Biol. Chem., 82:545, 1929. This protein method is also described in the current editions of Hawk and Bergeim's Practical Physiological Chemistry and Peter and Van Slyke's Quantitative Clinical Chemistry.

[5] Greenberg, D. M., and Gunther, L.: On the Determination of Diffusible and Nondiffusible Calcium, J. Biol. Chem., 85:491, 1930.

Sufficiency of Complaint in Revocation Proceedings.—A sworn complaint was filed with the State Board of Medical Examiners of California, charging the defendant-physician with unprofessional conduct in that she aided and abetted a named unlicensed person to practice a system and mode of treating the sick and afflicted. After notice and hearing, the board found the charges proved and revoked her license to practice medicine. She sought to annul the action of the board by successive appeals to the Superior Court, City and County of San Francisco, and to the District Court of Appeal, First District, Division 1, California. The complaint on which she was tried by the board, the defendant contended, was legally insufficient because it failed to set forth the specific acts relied on as constituting aiding and abetting.

In California, said the District Court of Appeal, if the language of the statute on which an accusation filed with the board of medical examiners is based is sufficiently explicit to advise the person charged of the particular kind of unprofessional conduct of which he is accused, an accusation following that language is legally sufficient to confer jurisdiction on the board to hear and determine the matter. Section 14 of the Medical Practice Act (Stats. 1927, p. 99) authorizes the board to revoke certificates to practice for "unprofessional conduct." Various acts are named which are deemed to constitute "unprofessional conduct," among which is ". . . . aiding or abetting any unlicensed person to practice any system or mode of treating the sick or afflicted." The accusation filed with the board follows the language of the statute and is sufficiently explicit to inform the person charged with the particular kind of unprofessional conduct of which he is accused. The words "aid" and "abet" are commonplace words, the meaning of which is well understood. Their legal definition is no different from their meaning in common parlance. The word "aid" means to assist, to supplement the efforts of another. "Abet" includes the elements of knowledge of the wrongful purpose of the perpetrator and counsel and encouragement of the illegal act.

The plaintiff relied apparently on ***Dyment* v. *Board of Medical Examiners***, 57 Cal. App. 260, 207 Pac. 409, in which the accused was charged with having "procured by fraud and misrepresentation a certificate to practice medicine." The accusation in that case was held to be legally insufficient because the accusation did not set forth any of the facts relied on as constituting fraud and misrepresentation. But the word "fraud," said the District Court of Appeal, unlike the word "aid" and "abet," has no fixed, definite meaning. It is an inference of law to be drawn from facts and circumstances alleged and proved. It can and does assume so many shapes that courts and authors have been cautious in attempting to define it. Each case in which fraud is claimed to be involved must be considered under its own facts. An allegation of fraud in general terms presents no issuable fact. The facts constituting the fraud must be pleaded with particularity. No such difficulty, however, presents itself in accusing one of aiding and abetting a named unlicensed person to practice.

For the reasons stated, the order of the board revoking the physician's license to practice was affirmed. (***Anderson v. Board of Medical Examiners*** (Cal.), 3 P. (2d) 344.)—***Journal of the American Medical Association***, Vol. 99, No. 3.

Resuscitation of the New-Born.—Brown divides the degrees of asphyxia in the new-born into three types: (1) The depressed child, who breathes occasionally in gasps, resists movements of the head and the extremities, and as a rule reacts to any form of stimulation, responds usually to the spanking-tubbing technique and promptly and vigorously to inhalations of oxygen-carbon dioxid mixtures administered by a face mask. (2) The asphyxiated baby, whose respiration occurs at long intervals and only following external stimulation, whose muscles are relaxed and who offers no resistance to the opening of the mouth, should immediately be examined with a laryngoscope and the pharynx aspirated. If no reflex irritation is induced by this aspiration, the glottis should be intubated under direct vision and the trachea aspirated. The reflex tone of the glottis is the best indication of the child's viability. (3) If there is no reflex spasm of the glottis, the baby is dying. Such a baby demands immediate and full oxygenation and the stimulating effects of carbon dioxid. Through a tube into the trachea, oxygen-carbon dioxid mixtures must be delivered under measured pressure. Such pressure overcomes atelectasis and allows an immediate diffusion of the oxygen-carbon dioxid mixture, which relieves the right heart pressure, increases the left heart circulation, and throws the necessary stimulation into the depressed respiratory center. — ***Canadian Medical Journal.***

C. M. A. DEPARTMENT OF PUBLIC RELATIONS

An open forum for progress notes on the department's activities, and for brief discussions on medical economics. Correspondence and suggestions invited. Address Walter M. Dickie, Room 2039, Four Fifty Sutter Street, San Francisco. This column is conducted by the Director of the Department.

Regulations of the Riverside County Medical Commission Adopted by the County Board of Supervisors Relative to the Medical Care of Indigent and Part-Pay Patients.

A commission has been appointed by the Riverside County Medical Society to formulate rules and regulations relative to the care of indigent and part-pay patients. The Board of Supervisors has appropriated funds for the employment of a social service worker and has given authorization to the Commission to establish such social service department. The following is a copy of the regulations governing both classes of patients:

I. REGULATIONS OF THE RIVERSIDE COUNTY MEDICAL COMMISSION RELATIVE TO INDIGENT PATIENTS

1. Members of the staff agree to care for such patients as are assigned to them and assume the same, but no more, responsibilities than for their own private patients.
2. Patients may designate the physician of their choice from the staff members.
3. If no preference is expressed or if the physician chosen is not available, a member shall be assigned in rotation from an alphabetical list.
4. Staff members shall be listed according to the following specialties. A member may register under one or more specialties: general medicine; general surgery; obstetrics and gynecology; eye, ear, nose and throat; urology; pediatrics; radiology; dermatology.
5. Changes in staff membership must be made through the Commission.
6. Differences among staff members and between them and the Social Service Department shall be referred to the Commission.
7. Patients may be cared for at the doctor's office or at the patient's home or may be referred to the county clinic or the county hospital for treatment at the doctor's option.
8. Except in an obvious emergency, hospitalization of patients must be done through the Social Service Department.
9. The cost of drugs: Dressings and necessary supplies shall be borne by the patient of the county through satisfactory regulations between the Social Service Department and the druggists.
10. Simple records: Transfer and discharge notices must be kept.

* * *

II. REGULATIONS OF THE RIVERSIDE COUNTY MEDICAL COMMISSION RELATIVE TO PART-PAY PATIENTS

1. Members of the staff agree to care for such patients as are assigned to them and assume the same, but no more, responsibilities than for their own private patients.
2. Patients may designate the physician of their choice from the staff members.
3. If no preference is expressed or if the physician chosen is not available, a member shall be assigned in rotation from an alphabetical list.
4. Staff members shall be listed according to the following specialties. A member may register under one or more specialties: general medicine; general surgery; obstetrics and gynecology; eye, ear, nose and throat; urology; pediatrics; radiology; dermatology.
5. Members of staff will charge such fees as are fixed by the classification established by the Medical Social Service Department.
6. Changes in staff membership must be made through the Commission.
7. Differences among staff members and between them and the Social Service Department shall be referred to the Commission.
8. Part-pay patients may be cared for at the doctor's office or at the patient's home or at the county hospital.
9. Except in an obvious emergency, hospitalization of patients must be done through the Social Service Department.
10. The cost of drugs: Dressings and necessary supplies shall be borne by the patient or the county through satisfactory regulations between the Social Service Department and the druggists.
11. Simple records: Transfer and discharge notices must be kept.
12. Part-pay service must be on a cash basis, the prescription fee being paid at each visit.

* * *

Federal Funds in Welfare Relief Work

Federal funds are being contributed to the various local communities to be used in conjunction with the state and county funds, for the purposes of welfare relief. It is permissible to use these funds for the furnishing of medical care in the home. Both San Francisco and Los Angeles County Medical Associations are submitting suggestions to the local relief commissions whereby medical service may expediently be supplied. An outline of the plan suggested by the Los Angeles County Medical Association is as follows:

OUTLINE OF PLAN OF THE LOS ANGELES COUNTY MEDICAL ASSOCIATION

Suggested by the Los Angeles County Medical Association for the medical care of indigents through the committee in charge of the federal and local relief fund.

Those Eligible for Care.—All those who are receiving or who are about to receive relief other than medical care through the committee in charge of this fund are eligible to receive medical care.

Definition of Medical Care.—This service shall be available for the acutely ill in their homes or at such places as designated by the committee, and under conditions as defined below.

Those Ineligible for Care.—If on the first or subsequent visit of the physician it is apparent that the malady is such as to require hospitalization, medical attendance under this plan shall be discontinued as soon as hospital care can be arranged.

Method of Securing Care.—After careful consideration, the Public Relations Committee of the Los Angeles County Medical Association feels that the best and most adequate medical service through the committee in charge of the federal and local relief fund would be rendered by the family physician, if there be one and if he be willing to comply with the requirements laid down by the committee in charge of the fund. If the family physician be unwilling or unable to respond to the call, another physician may be called from the list supplied by the County Medical Association.

The County Medical Association maintains a telephone exchange that is open twenty-four hours of the day and through which, by calling Vandyke 1221, any and all of the physicians, members of the County Medical Association, can be reached.

It is suggested that the County Medical Association will supply to its telephone exchange, lists of all doctors who have agreed to serve under this plan and who have agreed to meet all of its requirements; these lists to be arranged according to fixed geographical divisions of the county. (As most calls will come during the office hours of the physician, it would appear essential that these lists be grouped according to the addresses of the offices of the physicians. A great amount of preliminary clerical work can be avoided if the present grouping of members of the County Medical Association be accepted for this work. These are now grouped as follows: the city of Los Angeles is divided into ten major districts; the physicians in the county of Los Angeles are arranged in sixty-six major communities. Lists of physicians in these groupings could be made immediately available for the telephone exchange.)

The County Medical Association agrees to communicate at once with its entire membership of approximately 2,000 doctors of medicine, inviting all of them to coöperate in rendering this service, and zoned according to the above program, or according to a zoning system agreeable to the committee in charge of the federal and local relief fund.

Whenever an individual who is entitled to medical relief desires medical service, he or she shall apply to the proper office arranged by the committee in charge of the fund, where he shall be given authorization for the receipt of medical service. The family physician, if there be one, shall then be called; or if there is no family physician or the family physician is not available for such service, another physician on the zone list shall be called through the County Medical Association exchange, Vandyke 1221. In calling these physicians, names shall be used in rotation. Such authorization for medical service shall be limited to such rules and regulations as may be set by the federal relief fund committee.

Payment for Visits.—It is suggested that when a physician on the list of those available for this service be called to the home of a patient, aside from night calls, that he be compensated as follows: $2 for the visit and $1 for each additional member of the family at that address who may have been authorized as entitled for medical care at the time. His compensation for night calls is suggested as $4. (Experience shows that night calls are very seldom necessary.) Only calls received from the district headquarters, as established by the committee in charge of this fund and transmitted through the Los Angeles County Medical Association exchange, will be recognized by the physician as valid.

Ambulant cases may be authorized by the central bureau or whatever organization for this purpose is set up by the committee in charge of the fund, and these patients will be accepted by physicians listed for such service at their offices, the physicians to be compensated at the rate of $1 per visit.

The lists of these available physicians will be kept on file at the district headquarters or central bureau. The physician, when the patient calls upon him, will collect from the patient a card or other document showing that the patient is entitled to such service and the patient shall sign this card or other document, indicating that he has received such service.

X-ray, laboratory work, etc., which require expenditures on the part of the physician, shall require special authorization from the district headquarters or central bureau, and the physician shall be compensated accordingly for such expenditures.

Supervision by the County Medical Association.—The County Medical Association will furnish lists of physicians available for this service in the various zones that may be needed. (Note: If the zoning of physicians as now maintained by the County Medical Association be followed, a great deal of clerical work can be eliminated and lists can be made available in a very short time.)

The County Medical Association offers the use of its Public Relations Committee and Department as a consultation group to which the committee in charge of the fund may refer all cases of disagreement relative to medical service.

Forms.—Whatever forms may be necessary for the control and working out of this plan will be agreeable to the County Medical Association, and all physicians who are invited to render service under this plan must be agreeable to whatever system relating to forms that the committee in charge of this fund may designate.

The County Medical Association agrees, as a further check on these forms, that completed authorization slips bearing physicians' signatures may be forwarded to the office of the secretary of the County Medical Association at stated intervals for verification of the physicians' signatures.

Malpractice—Homeopathic Physician as Expert Witness Concerning Nonsectarian Surgical Standards.—The defendant, an "allopathic" physician, was sued for damages for malpractice in removing a cyst. Over the defendant's objection, a homeopathic physician was permitted to testify as to the defendant's care and skill. A witness, said the Supreme Court of California, on appeal, may testify as an expert if he discloses knowledge of the subject sufficient to entitle his opinion to go to the jury. No rule of law prevails in California precluding a physician trained in one school of medicine from testifying as to the treatment rendered by a physician trained in a different school. Such a rule might be promulgated if the charge of malpractice was based on some special course of treatment to be tested by the general doctrine of a particular school. Such a rule is not applicable, however, to a case in which the alleged malpractice is based on general charges of negligence with respect to matters of almost common observation within the experience of every physician. All schools of medicine require their adherents to exercise care in surgical work to insure cleanliness, proper sterilization of instruments, treatment of wounds after operation, and precautionary measures to prevent infection. In the opinion of the Supreme Court, the homeopathic witness in this case was fully qualified to testify as to the propriety of every act of negligence alleged to have been committed by the defendant. (*Hutter v. Hommel* (Calif.), 3 P. (2d) 554.) —*Journal of the American Medical Association,* Vol. 99, No. 3.

Tragedies of the Fourth.—One hundred and seventy persons lost their lives in the United States through celebrating the "Glorious Fourth" not wisely, but too well, according to the best available newspaper compilations. Ten of these, or one-seventeenth, were in Ohio, which has about one-eighteenth of the total population and (an interesting if unimportant coincidence) was the seventeenth state to be admitted to the Union.

Automobile and crossing accidents took the heaviest toll. In Michigan alone twenty-three persons died as the result of automobile wrecks; sixteen in California, and eight in Ohio. Two other persons drowned in this state; but there was no death from fireworks, although several children and one man were seriously injured. The man probably will lose the sight of both eyes as the result of delayed explosion of an aerial bomb. A firecracker caused a $3,000 warehouse fire in Cleveland.

New York hospitals treated 1,000 persons for fireworks burns; but few were serious. More than 100 fireworks accidents were reported from Chicago; eastern Pennsylvania had forty-six, of which three were fatal, and ninety-six persons were burned in southern New Jersey.

Columbus had only two reported accidents of this class, neither serious, and no one, so far as official reports show, was injured in a traffic mishap.—*Ohio Health News.*

STATE MEDICAL ASSOCIATIONS

This department contains official notices, reports of county society proceedings and other information having to do with the state associations and their component county societies. The copy for the department is edited by the state association secretaries, to whom communications for this department should be sent. Rosters of state association officers and committees and of component county societies and affiliated organizations, are printed in the directories noted under Miscellany, on the front cover index.

CALIFORNIA MEDICAL ASSOCIATION

GEORGE G. REINLE	President
CLARENCE G. TOLAND	President-Elect
EMMA W. POPE	Secretary-Treasurer

OFFICIAL NOTICES

Placement Bureau Notice—Medical Officers Needed in Civilian Conservation Corps for Immediate Service.—Medical officers who are now members of the Officers' Reserve Corps, not above the grade of captain and who desire six months' service with the Civilian Conservation Corps, communicate with Commanding General, First Reserve Area, Presidio in San Francisco, California.

* * *

Medical officers not over 35 years of age who are not members of the Officers' Reserve Corps and who desire such duty may be commissioned in the Officers' Reserve Corps and then detailed for such duty. Communicate with Commanding General, First Reserve Area, Presidio of San Francisco, California.

* * *

The fall meeting of the Council of the California Medical Association will be held in Los Angeles, September 30, 1933.

* * *

Application for Place on Annual Program.—Members who desire to present papers before the 1934 annual session, which will be held at Riverside, should write to the secretary of the section before which the particular subject should be presented.

Names and addresses of section officers are regularly published on advertising page 4 of each issue of CALIFORNIA AND WESTERN MEDICINE.

When requesting place on the program, a brief résumé of the paper should accompany the application.

* * *

Extension Lecture-Service.—Any member who has a subject of medical interest to members and who is willing to go on call to the various county medical societies of the state, may furnish before September 20 his name and the titles of not more than three addresses. Address the California Medical Association, 2004 Four Fifty Sutter, San Francisco.

Those who enroll for this gratuitous service many times receive calls at inopportune moments, but that the service compensates is evidenced by the infrequency of the requests for release.

As this list of Extension speakers and subjects will be published in the October issue of CALIFORNIA AND WESTERN MEDICINE, it is necessary that replies to this notice be received not later than September 20.

COMPONENT COUNTY MEDICAL SOCIETIES

SACRAMENTO COUNTY

A regular meeting of the Sacramento Society for Medical Improvement was held at the Elks' Temple on May 16, 1933. In the absence of the president, Dr. George Briggs, the vice-president, Dr. Oscar Johnson, called the meeting to order at 8:30 p. m. Fifty-six members and guests were present.

The minutes of the last regular meeting were read and approved.

Dr. Burt Howard reported a case which presented many diagnostic difficulties. It appeared, at first, to be an aneurism of the descending portion of the arch of the aorta. It proved later to be an endothelioma of the chest.

The first paper of the evening was a most interesting and timely discussion of the surgery of the intra-abdominal hollow viscera, by Dr. Edmund Butler of San Francisco. His paper dealt entirely with the treatment of injury to abdominal viscera. He stressed the importance of early diagnosis, and pointed out that diagnosis early is often very difficult. The symptoms and signs of various injuries were discussed and methods of treatment outlined. His paper was well illustrated by lantern slides.

Subphrenic Abscess was the title of the second paper of the evening, and was read by Howard W. Stephens, M. D., of San Francisco. He described the anatomy of the subphrenic spaces and outlined the etiology of subphrenic abscess. He discussed the symptoms, signs and diagnosis of subphrenic abscesses, and pointed out that they were all secondary to some other infection. Knowledge of this primary infection was important in diagnosis and proper treatment. In operations on the abdominal viscera, Doctor Stephens pointed out the importance of prophylaxis in preventing the development of subphrenic abscesses. He brought his paper to a close by describing surgical procedures for the treatment of subphrenic abscesses.

Appreciation for the papers was voiced by Doctors Leo Farrell, Frank MacDonald and Lindsay.

The application of Doctor Fabian was read for the first time.

The application of Doctor Hirsch was read for the second time and he was admitted to membership in the Sacramento Society for Medical Improvement.

Following the report of the Board of Directors, Dr. Fred Scatena moved that the next regular meeting of the Sacramento Society for Medical Improvement be set aside for the purpose of certifying nominees for the Sacramento County Health and Welfare Board. The motion was seconded and passed. Dr. Philip Young moved that the chair appoint a nominating committee which would present the names of four men who had expressed their willingness to serve on the Sacramento County Health and Welfare Board; these names to be voted upon at the next regular meeting. The motion, being seconded, was voted by secret ballot and lost. Dr. Edward Babcock discussed the examination of preschool children as carried on at present in Sacramento, and made a plea that something be done to correct evils associated with such practice. Dr. William Beattie moved that the Sacramento Society for Medical Improvement go on record as opposed to the examination of preschool children as conducted at present, and that the matter be referred to the public relations committee. The motion, after being duly seconded, was voted upon and passed.

Dr. Nathan Hale gave an interesting report of the last annual convention of the California Medical Association held at Del Monte. Doctor Hale's report was accepted.

There being no further business, the meeting adjourned.

G. W. LEE, *Secretary.*

*

VENTURA COUNTY

The June meeting of the Ventura County Medical Society was held in the clinic building of the Ventura County Hospital on June 13, Dr. Artemas Strong presiding.

Members present were: Doctors Homer, Strong, Drace, Achenbach, Moser, Coffey, W. S. Clark, Jones, Shore, Illick, Armitstead, and Felberbaum. Guests were: Doctors Zeiler, Tolefson and Meland of Los Angeles, and Doctors Ullmann, Evans, Finley, Rich, Bradford, Crawford, Covault, and Gronhovd.

The scientific program preceded the business meeting.

Doctor Achenbach introduced Doctor Zeiler, a member of the California Cancer Commission, as the speaker of the evening. Doctor Zeiler opened the evening with the subject of malignancies, and then introduced Doctor Tolefson, who gave a paper on *Pelvic Malignancies.* Discussion by Doctor Meland followed, and Doctors Ullmann and Evans of Santa Barbara closed the discussion.

In the business meeting that followed, after the usual reading and adoption of minutes, applications for membership of Doctors Beach and Hainsworth were presented and balloted upon. Both were elected members of the Ventura County Medical Society.

William Felberbaum, *Secretary.*

CHANGES IN MEMBERSHIP

New Members (46)

Alameda County.—Evelyn Raynolds Ott, Wallace T. Partch.

Butte County.—John Huffman White.

Fresno County.—Roy Earl Allen.

Humboldt County.—Samuel Pink Burre.

Imperial County.—Karl H. Kortheuer, Iner Sheld Ritchie.

Los Angeles County.

Ward Clair Alden
Ted A. Butzin
Lester Jankay Dutch
Roy Emmett Flesher
Charles Allison Foulks
Verne Gordon Ghormley
Benjamin Goldberg
William Leighton Griffin
Wesley Robert Heard
Harold R. Hennessy
Alfred G. Huenergardt
Ralph Wilson Hulett
Harold Stephen Johnson
Samuel Wesley Kime
Frederic W. Kuhlmann
John P. Mortensen
Bernard Paul Mundall
Esther Serida Nelson
R. B. Raney
Lyman Harold Robison
Carl John Shaffer
Roy F. Sheldon
Leo D. Smith
Alonzo D. Snyder
Arthur G. Tullar
H. Milton Van Dyke
Francis P. Weston
Dwight Dunham Young
Maurice Leon Young

Merced County.—Edwin Morris Soderstrom.

San Bernardino County.—Robert I. Hodgin

San Diego County.—James Norman O'Neill, Harold W. Pfeiffer, Floyd Lawrence Wergeland.

San Francisco County.—James B. Herring, LaVerne Wright.

Ventura County.—Ellarine L. Hainsworth.

Yolo-Colusa-Glenn County.—Milford B. Bransford, William Henry Walker.

Transferred (3)

Mathew E. Hazeltine, from San Francisco to Marin County.

James F. McAnally, from Sacramento to Placer County.

Carl H. Talmage, from Los Angeles to Napa County.

In Memoriam

Brier, Isabel Presbrey. Died in Livermore, July 7, 1933, age 34 years. Graduate of the University of California Medical School, San Francisco, 1926. Licensed in California, 1926. Doctor Brier was a member of the Los Angeles County Medical Association, the California Medical Association, and a Fellow of the American Medical Association.

✠

Carroll, John Joseph. Died in San Francisco, July 21, 1933, age 37 years. Graduate of the Creighton University School of Medicine, Omaha, 1919. Licensed in California, 1924. Doctor Carroll was a member of the San Francisco County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

✠

Edelman, David William. Died in Los Angeles, August 6, 1933, age 64 years. Graduate of the New York University Medical College, New York, 1891. Licensed in California, 1892. Doctor Edelman was a member of the Los Angeles County Medical Association, the California Medical Association, and the American Medical Association.

✠

Jennings, George Darwin. Died June 6, 1933, age 61 years. Graduate of the Northwestern University Medical School, Chicago, 1899. Licensed in California, 1900. Doctor Jennings was a retired member of the Los Angeles County Medical Association, the California Medical Association, and a Fellow of the American Medical Association.

✠

Lessard, Mark Davis. Died in San Francisco, August 1, 1933, age 52 years. Graduate of University of California Medical School, San Francisco, 1923. Licensed in California, 1923. Doctor Lessard was a member of the San Mateo County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

✠

Lyster, Theodore Charles. Died in Los Angeles, August 6, 1933, age 58 years. Graduate of the University of Michigan Medical School, Ann Arbor, 1899. Licensed in California, 1920. Doctor Lyster was a member of the Los Angeles County Medical Association, the California Medical Association, and a Fellow of the American Medical Association.

✠

Martineau, Allen Sherman. Died in San Diego, July 29, 1933, age 36 years. Graduate of the University of Pennsylvania School of Medicine, Philadelphia, 1925. Licensed in California, 1927. Doctor Martineau was a member of the Los Angeles County Medical Association, the California Medical Association, and a Fellow of the American Medical Association.

✠

Shanks, Frederick Hastings. Died in San Francisco, July 28, 1933, age 64 years. Graduate of the Jefferson Medical College of Philadelphia, 1891. Licensed in California, 1891. Doctor Shanks was a member of the San Francisco County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

OBITUARIES

Bradford Woodbridge

1863-1933

Death has not been kind to the practicing physicians of Placer County. In the past thirteen months six physicians have answered the last call. Five of these were members of the Placer County Medical Society. Four of them had practiced fifty years or more. The combined years of practice of these four was 212 years. Two of them had helped organize the Placer County Medical Society in 1889. Three of them were past presidents of the Placer County Medical Society, and two others had served this society as secretary.

The latest to leave us was Dr. Bradford Woodbridge of Roseville, who died August 17.

Doctor Woodbridge was a graduate of Cooper Medical College in the class of 1883 and had practiced in Placer County since 1896, first at Rocklin and later at Roseville. Doctor Woodbridge was a member of the Placer County Medical Society since its reorganization in 1903. For two years he was president of the society.

Doctor Woodbridge was one of the most prominent citizens of Placer County—a capable, beloved physician, a public-spirited citizen, a kind and devoted husband and father. He will be missed by the entire medical profession and by a host of friends.

✠

Theodore Charles Lyster
1875-1933

The sudden death of Dr. Theodore Charles Lyster on August 5, 1933, brought sorrow to a great circle of associates and friends. That he had been at his usual work up to the moment of death but served to accentuate their feelings of untimely loss, the magnitude of which will come to be realized only with the passage of time.

In Doctor Lyster, virile enthusiasm, infectious loyalty and irresistible friendliness were welded into a magnetic personality. All who knew him felt the charm of his happy combination of dynamic ability and sympathetic understanding; he had the rare gift of being able to infuse into others his own selfless effort and peculiar effectiveness. Mere coincidence does not suffice to account for the frequent selection of Doctor Lyster when difficulty arose or a problem had to be solved; each task discharged stands as a milestone marking some special service in the course of his useful life. Reflections of him are mirrored in the hearts of associates and patients. One friend has written: "Probably everyone who came in contact with him liked him; which would not necessarily mean much were it not that he had the high character and mental ability to back up what in others might have seemed an artificial amiability." Another, "He knew how I felt about him. I could never get it into words, although I often tried. He'd just laugh, put his arms around me and pat me. He gave me a beautiful world of light and color and action. His example gave me an attitude with which to face reality—not lightly, but joyously, thankfully. Greatest of all, he made me feel from his height, that he believed in me . . . the healing strength of his hands and the radiance of his smile are with me now and always. . . . I send you not sympathy but my grateful realization of our comradeship in memory and devotion."

Doctor Lyster was interested in many local, state and national affairs. He played an active part in reorganizing the Army Medical Service following the Spanish-American War; in the reconstructive sanitation of Cuba, Panama, and the Philippines; in the evolution of the Army Medical School; he initiated and directed the Air Medical Service, and the eye and ear departments of the Surgeon-General's office.

On the death of Doctor Gorgas, Doctor Lyster carried to a successful conclusion the work of the Rockefeller Foundation against yellow fever in Mexico and Central America. He served as medical examiner for the Department of Commerce from the beginning of its organization to issue licenses to commercial aviators. Largely by reason of his persistent efforts has it been possible to work out a practical plan whereby the Los Angeles County Medical Association took over as a nucleus for its own library the Barlow Medical Library, of which Doctor Lyster had been one of the trustees and president. He was ex-president of the Southern California Medical Association and was an active member of the California State Society, Los Angeles Clinical and Pathological Society, the American Laryngologic, Rhinologic and Otologic Society, and the American Ophthalmological Society. He was a member of the Westport Beach Club and the California Club.

Committee: Isaac H. Jones, *Chairman*
William Duffield
Lawrence K. Gundrum
Eugene R. Lewis

The Tax Dollar and Health.—Your tax dollar! How much of that hard-earned dollar do you think is spent to protect your most priceless possession—health!—and that of your family at home? asked Dr. Fred O. Toney in introducing a recent broadcast sponsored by the American Public Health Association, over the National Broadcasting System. Proceeding to answer his own question, some, he remarked, have said, "maybe half," evidently judging from their own ideas of the value of health protection to themselves personally, as compared with the other primary services.

Ohioans should be able to digest Doctor Toney's facts and figures with profit; for they confirm, from the national field, the facts and figures that the Director of Health, Dr. H. G. Southard, has been driving home in this state, ever since the era of economic stress became operative. The national figures, as deduced by Doctor Toney differ from the Ohio figures, as presented by Doctor Southard, only in showing that Ohio has paid more per capita for fire and police protection than the national average, and minutely less for health protection.

Reverting to the individual guesses as to cost of health protection, they are wrong, according to Doctor Toney. Only an infinitesimal fraction of 1 per cent of that tax dollar is spent for safeguarding health in the United States. To put it another way, the average expenditure for health protection in the United States during prosperous times is only the small sum of one dollar a person a year; and of this, only half, or 50 cents, comes from taxes. The rest is from voluntary gifts and contributions. In the country towns and rural areas, only from 25 to 50 cents a person a year is spent to prevent unnecessary sickness and deaths.

For this small outlay for health the citizens have been receiving: (1) protection of child life and motherhood, to keep down the death rates of those most dear to us; (2) suppression of contagion, mostly the diseases of childhood; (3) maintenance of public health laboratories for detection of epidemic disease; (4) recording of births and deaths, which guides the health army to the most effective point of attack; (5) sanitary supervision of human wastes to prevent pollution of water and milk supplies, also to control vermin and insects as spreaders of disease.

Surprising results have accrued from this small expenditure. Death rates and sickness rates have been falling steadily in the United States, especially during the last decade. Infant deaths, child deaths, typhoid fever deaths, smallpox deaths, tuberculosis and diphtheria deaths, and general death rates everywhere, have been falling, falling under the influence of that tiny expenditure of less than 1 per cent of the tax dollar, used to render effective the scientific knowledge of how to prevent sickness and death.

Now, the American Public Health Association approaches the national farm and home listeners, everywhere in the land, with a brief and very simple plea. That plea is, "support your local health officer, in his effort to maintain the barest essentials of health protection in your community—against the unfortunate tendency now everywhere apparent, to cut health services more—often much more—than the other services of government."

Police protection! Four dollars and fifty-two cents a person, a year. It's important, of course, nobody disputes that. But *is* it more important than health? Should health protection be curtailed more than police protection?

Fire protection! Three dollars and thirty-two cents a person, a year. Again, an important public service, but touching property more than lives, in the last analysis. Is it more important than health?

Schools! Sixteen dollars and seventeen cents a person, a year. Is education of more consequence to us than the lives and health of the mothers and children?

Common sense and sound judgment, we believe, should be applied to this most confusing problem of curtailment of public budgets. Health service should, perhaps, be cut—here and there—in such desperate economic times as these, even though already insufficient as it is. But should health protection be cut proportionately more than police protection? Or fire protection? Or education?—those other essential services of government. That, you citizens must decide.—*Ohio Health News.*

MISCELLANY

Under this department are ordinarily grouped: News: Medical Economics; Correspondence; Twenty-five Years Ago column; Department of Public Health; California Board of Medical Examiners; and other columns as occasion may warrant. Items for the News column must be furnished by the fifteenth of the preceding month. For Book Reviews, see index on the front cover, under Miscellany.

NEWS

Coming Meetings.

California Medical Association, Riverside, California, April 30 to May 2, 1934. Emma W. Pope, M. D., Secretary, 2004 Four Fifty Sutter, San Francisco.

Nevada State Medical Association, Las Vegas, Nevada, September 29 to 30, 1933. Horace J. Brown, M. D., Secretary, Medico-Dental Building, Reno.

Pacific Coast Society of Obstetrics and Gynecology, Portland, Oregon, October 19 to 20, 1933. Clarence A. De Puy, M. D., Secretary, 230 Grand Avenue, Oakland.

Utah State Medical Association, Salt Lake City, September 14 to 16, 1933. L. R. Cowan, M. D., Secretary, 305 Medical Arts Building, Salt Lake City.

Medical Broadcasts.*

American Medical Association Health Talks.—The American Medical Association broadcasts on Tuesday and Thursday from 9:15 to 9:20 a. m., Chicago daylight saving time, which is one hour faster than central standard time, over Station WBBM (770 kilocycles, or 389.4 meters).

There is also a fifteen-minute talk, sponsored by the association, on Saturday morning from 9:45 to 10 o'clock over Station WBBM.

* * *

San Francisco County Medical Society.—The San Francisco County Medical Society broadcasts every Tuesday from Station KFRC, 4 to 4:15 p. m., and over Station KJBS from 11:15 to 11:30 a. m.

* * *

Los Angeles County Medical Association.—The radio broadcast program for the Los Angeles County Medical Association for the month of September is as follows:

Tuesday, September 5—KFI, 10 to 10:15 a. m. and KECA, 9:30 to 9:45 a. m. Subject, Snake Bites.

Tuesday, September 12—KFI, 10 to 10:15 a. m. and KECA, 9:30 to 9:45 a. m. Subject, What Price Health?

Tuesday, September 19—KFI, 10 to 10:15 a. m. and KECA, 9:30 to 9:45 a. m. Subject, Some Pertinent Don'ts.

Tuesday, September 26—KFI, 10 to 10:15 a. m. and KECA, 9:30 to 9:45 a. m. Subject, When You Have a Cold.

Pacific Coast Society of Obstetrics and Gynecology. The annual meeting of the Pacific Coast Society of Obstetrics and Gynecology will be held in Portland, Oregon, October 19, 20, and 21, 1933. An interesting program of operative clinics and scientific papers is to be presented.

Dr. Albert Mathieu of Portland, Oregon, is the president of the society, Dr. Lyle G. McNeile of Los Angeles is president-elect, and Dr. Clarence A. De Puy, 230 Grand Avenue, Oakland, is secretary.

Modern Knowledge of Cancer Set as Radio Talk Title.—A discussion of the nature and treatment of cancer is being arranged by the Medical School of the University of California began in August. The cancer programs will be broadcast at 3:45 p. m. on Fridays from August 4 to September 29, inclusive, over KPO, San Francisco; KECA, Los Angeles; and KFSD, San Diego.

Interstate Postgraduate Session at Cleveland.*—The International Assembly of the Interstate Postgraduate Medical Association of North America will be held in the Public Auditorium, Cleveland, Ohio, October 16 to 20, 1933. Many distinguished teachers and clinicians will appear on the program. All members of the California Medical Association are cordially invited to attend. Registration fee of $5 admits all members of the profession in good standing.

University of California Child Welfare Work Saved by Gift of $17,235 from East.—Fears for the research program of the University of California Institute of Child Welfare, which was seriously threatened by the legislative budget cut, were temporarily allayed by the receipt of an emergency grant of $17,235 for the year 1933-1934 from the General Education Board of New York.

Announcement of this timely gift was made by President Robert Gordon Sproul, following its acceptance by the regents of the University.

The Child Welfare emergency fund was one of forty gifts of money, books, art treasures, and teaching equipment reported by the regents. The total amount of funds received for the month exceeded $40,000.

Typographical Correction.—In the article on "The Physician's Interest in the Making of a Will" by Hartley F. Peart, Esq. (July CALIFORNIA AND WESTERN MEDICINE, pages 20 and 21), one paragraph, as there printed, stated "three-fifths." This was in error, and should have read "four-fifths," to make the meaning clear. In other words, only one of the two-fifths referred to is subject to the will, and the will is also applied to the remaining three-fifths, that is, in all to four-fifths of the estate.

Inactive Duty Training for United States Army Medical Department Reserve Officers.—The medico-military course of inactive duty training for Medical Department Reserve officers, which has been held at the Mayo Clinic during the past four years, will again be held this year from October 1 to 14, both dates, inclusive. The inactive duty training will follow the plan so well worked out under the auspices of Colonel George A. Skinner, and the military features will be under his personal supervision.

This type of military medical training is now well established, and has proved its worth during the past four years. The course offers valuable and interesting training for the Medical Department officers of all the components of our national defense. The staff and faculty of the Mayo Clinic have again placed their unexcelled facilities at the service of their government in the interest of preparedness, and have extended an invitation to all the services to participate.

---

* County societies giving medical broadcasts are requested to send information as soon as arranged (giving station, day, date and hour, and subject) to CALIFORNIA AND WESTERN MEDICINE, 450 Sutter Street, San Francisco, for inclusion in this column.

* A major list of the names of the contributors to the program, with other information, appears on page 31, advertising section of this journal.

This short course is equally applicable to general practitioners and specialists. The morning hours are devoted to purely professional subjects selected by the student officers. The afternoon hours pertain solely to medico-military subjects, and the evening hours are covered in a lyceum course of general interest.

Application for this course of inactive duty training should be made to the Corps Area Surgeon, Seventh Corps Area, Omaha, Nebraska. Applications should state the character of the work the candidate desires to follow in the morning hours. All student officers are expected to attend and participate in the afternoon and evening sessions. Each applicant should fully understand that the invitation to accept this course of study without charge is extended by the Mayo Clinic; that the project is without expense to the Government; and that one hundred hours' credit will be given those who take and complete the course. While it is desirable to attend the entire course, those whose time will not permit this may join or leave at any time and will receive credit for the hours spent in training. Uniforms are optional.

CALIFORNIA'S CLINIC LAW *

Assembly Bill No. 1277, Chapter 756—Approved by Governor James Rolph, Jr., June 5, 1933

The title of the above referred to clinic law states that the Act provides "for the issuance and revocation of such permits (to operate clinics) by the State Board of Public Health." It therefore became incumbent upon the State Health Board to study the measure. In order to avoid complications, the board instructed its director to send to the Attorney General of California some questions in which information was requested on certain sections of Assembly Bill No. 1277. Since much publicity has been given to this new law, the reply of Attorney General Webb is here printed for the information of members of the California Medical Association who are on the staffs of, or who are interested in clinics. Attorney General Webb's letter follows:

San Francisco, August 18, 1933.

Hon. Giles S. Porter,
Director, Department of Public Health,
312 State Building,
San Francisco, California.

Dear Sir:

In your communication of the 29th of June, 1933, you refer to Chapter 756 of the Statutes of 1933, better known as the "Clinic Law," and ask the advice of this office concerning a number of sections thereof.

Your first four questions pertain to what are and what are not clinics under Section 1 of the Act.

In answering these questions, I first direct your attention to the fact that there are two classes of clinics defined by that section. The first class of clinic (Clause A) is a "place, establishment or institution maintained, conducted and operated" "for the purpose of furnishing at such place, establishment or institution" "advice, diagnosis, treatment, medicine, drugs, appliances or apparatus to persons" "afflicted with bodily and/or mental diseases or injuries." To come within the terms of such classification and therefore be subject to regulation, a clinic must be operated "under the name or title of clinic or dispensary, or health center, or any other words or phrases of like or similar import"; but in this connection it is my opinion that any words or phrases which convey to the public the thought that the concern is equipped to, and does, render advice, diagnosis or treatment to, or prescribes or administers medicines or drugs for or to, or maintains appliances or apparatus for the special use of, persons afflicted with bodily and/or mental diseases or injuries, would constitute a name or title sufficient to bring the concern within that requirement of the statute. Furthermore, I am of the opinion that such name or title need not be the sole or main name or title of the concern, but it is sufficient if such words or phrases are used in conjunction with or in advertising the main name or title of the concern. The question to be asked is not, is a particular name used, but does the concern propose to render any of the services mentioned to persons afflicted with bodily and/or mental diseases or injuries, and does the name, title or publicity of such concern reveal that purpose. That this was the intent of the Legislature is made evident by the further provision that concerns fall within such classification whether operated "independently or in connection with any other purpose."

The second classification (Clause B) consists of those "places, establishments or institutions maintained, conducted and operated" "for the purpose of advising and informing persons of means and measures to prevent or avoid disease or injury." As to this second class of clinics, it is immaterial under what title or name the venture is conducted.

1. An ordinary drug store, unless it holds itself out to give preventative advice, under clause "b," or unless it uses the name clinic, dispensary, health center, or the like, as hereinbefore explained, and makes a practice of furnishing advice, diagnosis, treatment, medicines, drugs, appliances or apparatus to persons "afflicted with bodily and/or mental diseases or injuries," does not come within the terms of the Act, and is not subject to regulation thereunder.

2. A concern which sells braces, artificial limbs, exercising machines and the like, does not come within either definition of a clinic, if it proposes to do no more than to sell such things, or to maintain them for the uncontrolled use of persons desiring to use them. If, on the other hand, it holds itself out to diagnose the ailments of, or to give treatments to, or to control the use of such appliances or apparatus by, persons afflicted with bodily and/or mental diseases or injuries, or to give advice and information as to means or measures to prevent or avoid disease or injury, then such concern is a "clinic," as defined by the statute, and is subject to regulation.

The sale of such mechanical equipment by a drug store would not constitute a drug store a "clinic"; but, if the drug store held itself out to render the additional services heretofore mentioned, such drug store would be a "clinic."

3. Under clause "b" there is no specific requirement that there be personal contact between the clinic and the persons to whom advice is given. However, I am of the opinion that such a requirement is implied, first, by reason of the fact that it must be some place, establishment or institution "maintained, conducted and operated" to constitute a "clinic"; second, because the Legislature has used the terms "dispensary" and "health center" as closely related in meaning with the term "clinic"; and, third, because the five classes into which all clinics are divided by Section 3 of the Act, all contemplate that the persons to be treated or advised shall come to such place, establishment or institution for treatment or advice. From these circumstances, I draw the further deduction that the advice and information specified in clause "b" of Section 1 was intended to mean advice and information given to individuals as applicable to them and their particular ailments and conditions, and not advice and information which would be applicable, generally, to all types and classes of people. For example, I do not believe that the Legislature regarded the publication of a magazine dealing principally with matters of hygiene, sanitation, physical culture, right thinking, or the like, to be or constitute a "clinic." Nor do I think that the radio broadcasting of lectures on such subjects would constitute either the broadcasting company or the lecturer a "clinic." Similarly, the publication of health columns in a newspaper does not bring the newspaper under the Act. That these conclusions are correct is made evident by the fact that such broadcasting of information to the public at large (no fee being paid by the individuals who receive such information) falls under no one of the five classes into which all clinics are divided by Section 3 of the Act.

4. A place may be any place, a doorway, or a street corner. All that is required is that, by repetition, it be maintained.

5. Your next question concerns what is a "nominal charge" as the term is used in Section 3 (a) of the Act. There is no legal definition of that term in the Act, and the question is one of fact. The word "nominal," alone, is legally defined to mean not real or substantial. I would say that under Section 3 (a) a nominal charge is ordinarily one which is relatively insufficient to defray the cost of rendering the service or advice. However, in this connection, as the term "nominal charge" is used in Section 3 (a), in conjunction with the clause "on account of administrative costs if approved by the Director of Public Health . . . " it would seem that any charge made to defray administrative costs, if approved by the director, would be a "nominal charge" within the meaning of that section and for the purpose of applying its provisions.

6. Calling my attention to Section 3 (b) of the Act, and more particularly to the clause "and supported in whole or in part by any trust, donation, bequest or foundation," you ask how large such trust, donation, bequest or foundation would have to be. My answer is that such question is one of fact, upon which the State Board of Health would have to rule. In any event, the trust, donation, bequest or foundation would have to be a substantial one; that is, it would have to supply a substantial part of the operating expenses of the particular institution. The larger the institution, the larger the trust, donation, bequest or foundation would have to be in order to bring that institution within the classification mentioned. Except in a case of abuse of discretion, the determination of the board would control.

7. Your next question pertains to Section 3 (c) of the Act. You wish to know whether a clinic maintained by an employer would have to be operated solely for clinical services to be rendered to its employees or whether it

---

* See also this number of CALIFORNIA AND WESTERN MEDICINE, page 204, for editorial comments.

would remain within the classification of "employer's clinic" if it rendered such services to the members of the families of the employees of the concern operating it.

The term used by the Legislature is "employees only." That term is positive and leaves no room for construction. Consequently, I am of the opinion that to fall under the classification "employer's clinic," a clinic must be operated and maintained solely for the purpose of rendering clinical services to these persons who are, in fact, employees of the concern operating and maintaining such clinic.

Undesigned and isolated instances of treatment to persons who were not employees would not be sufficient to deprive an "employer's clinic" of its status of such. But if such clinic was deliberately and intentionally organized and maintained to render services to non-employees, as well as to employees, it would cease to be an "employer's clinic." Indeed, it would cease to be entitled to operate as a clinic at all, for it would fall under no one of the five categories into which all clinics are divided by the Act, and yet it would fall within the general definition of clinic as contained in Section 1. That it could be neither a charitable nor a private pay clinic is made evident by Section 4 of the Act.

However, if an employer wished to provide clinical services to its employees and to the members of their families as well, it could do so by contract with a private pay clinic. In such case, however, the clinic could not be conducted, operated and maintained by the employer; it would have to be conducted, operated and maintained by one or more persons licensed to practice one or more of the healing arts as specified in Section 4. Furthermore, the clinic would have to be licensed by your board.

8. You next call my attention to the fact that practically every clinic charges a fee for advice, diagnosis, treatment or service, or for drugs, medicines, appliances or apparatus, and you wish to know whether this fact would not bring every clinic under the classification of "private pay clinic."

My answer is that it would not. Charitable clinics are authorized to make nominal charges. A teaching or research clinic is not prohibited from making charges. The only limitation of that character placed upon an employer's clinic is that it be operated without profit to the employer. Section 3 (d) of the Act must be read in conjunction with those other provisions, and when so read, it is apparent that the Legislature intended a private pay clinic to be one which was operated for the purpose of profit.

9. Your next question reads as follows:

"Under Section 4, a question arises concerning any clinic or hospital organization, or association, be it conducted by individuals, mutual coöperative, or corporation, and which furnishes healing arts services and/or medical supplies to individuals who pay on a monthly or other regular periodic basis. Does such an organization come within the scope of this law?

"A goodly number of such hospital associations are not operated by persons licensed by the State of California to 'practice medicine or surgery or dentistry or osteopathy or chiropractic or drugless healing.' "

I assume that what you wish to know is whether a clinic, supported by monthly or other regular periodical contributions by a number of persons and maintained for the benefit of those persons, is a private pay clinic, as defined by the Act, and therefore must be maintained and operated by persons duly licensed to practice medicine, surgery, osteopathy, chiropractic or drugless healing.

It is my opinion that a clinic so supported, and maintained for such purpose, would either be a private pay clinic or a clinic forbidden by law to operate, depending upon who controlled its functions. Section 4 of the Act prohibits a corporation from conducting, operating and maintaining a private pay clinic. Of consequence, a private pay clinic could not be under the control of stockholders, officers or directors of a corporation as such. Nor could it be conducted, operated and maintained by the elected representatives of a group of laymen, for in that case the laymen would be the principals conducting, operating and maintaining the clinic, which is forbidden by the statute. But one or more persons licensed to practice one or more of the healing arts, as specified in Section 4, could organize and, having organized, could conduct, operate and maintain such a clinic and could contract with laymen, either individually or collectively, to furnish them clinical services either on the fee basis or on the periodical payment basis, provided, of course, that the laws of the state pertaining to insurance were not violated.

10. At the beginning of Section 5 of the Act, and again at the end of that section, certain clinics are exempted from applying for and obtaining permits to operate as such. The clinics enumerated in the first exception are not identical with the clinics enumerated in the second exception. You wish to know which one of these exceptions should be followed by your department. My answer is that your department should follow both of them, and should not require clinics falling under either exception to apply for or secure permits.

11. Your next question pertains to Section 6. You direct my attention to the fact that upon a permit being applied for, it becomes the duty of the Director of Public Health to make an investigation, and that among other things it is the duty of the director to determine whether there is need for such a clinic in the community in which it is proposed to be maintained.

It is further provided that if the director finds that the establishment or continued maintenance of such clinic is for the benefit of the public health he shall so report to the State Board of Public Health, and the board shall issue such permit or cause such permit to be issued.

The section makes no provision as to what shall be done by the board in the event the director makes no report or makes an unfavorable report. It is provided, however, that in the event a permit is not issued within three months after the filing of the application therefor, the board must state the grounds and reasons for such refusal and furnish a copy thereof to the applicant.

You wish to know whether such provisions empower the board to limit the number of clinics in any locality. You give as an example an instance where ten clinics are operated in a given community and the board determines that five are sufficient, and you wish to know whether the board has the power to require five of such clinics to go out of business.

In answer to such question, it is my opinion that Section 6 of the Act does not make the action of the board dependent upon the report of the director except where the report is favorable. The director is only required to render a report where it is favorable, whereas the board is required to make a statement of the grounds for the refusal to issue a permit where one applied for is not issued.

From these considerations I am of the view that where the report of the director is unfavorable, or where the director renders no report, the burden is cast upon the board to determine whether or not the application for a permit should be granted, and that, in the event it decides that the permit should not be granted, it must assign specific grounds for its refusal. Where the board refuses to issue a permit applied for, the aggrieved parties may have a court of competent jurisdiction review the board's action, and, upon such review, it would be the duty of the court to determine whether the grounds assigned for the refusal to grant the permit were legally sufficient. Should the sole ground for the denial of such application be that there were too many clinics in the community and that it was thought desirable to reduce their number, I am of the opinion that the court would hold that the reason assigned for the refusal to grant the permit was insufficient.

12. Your next question is whether governmental clinics are exempt from the paying of the annual license fee, and whether such clinics are exempt from filing annual applications for permits.

Section 9 exempts all governmental clinics from the payment of license fees. However, such clinics are not exempted from the requirement that they secure annual licenses, except clinics and dispensaries of the United States of America, or of any department, official or agency thereof. (See Section 5.) Consequently, clinics of the State of California, of any political subdivision thereof, and of any city, city and county, district, or municipality, are required to apply for and obtain permits.

13. You next ask whether city or county health departments which maintain a number of clinics in different sections of the city or county must secure separate permits for each clinic, or whether one permit will be sufficient to cover all clinics operated in the area.

It is my opinion that a separate permit must be secured for each clinic. (See subdivision "c" of Section 3.)

You next wish to know which clinics are exempt from applying for permits and which are exempt from paying the annual license fee.

It is my opinion that (1) United States Government clinics, (2) employer's clinics, and (3) research clinics working under nonprofit foundation and registered with the United States Government for tax exemption, are exempt from applying for permits to operate as clinics. Those classes of clinics are likewise exempted from the payment of the annual license fee. (See Section 5.) In addition thereto, all other governmental clinics are exempted from the payment of the annual license fee. (See Section 9.)

15. Your next question pertains to the license fee to be charged.

Section 9 provides in part that the annual permit fee shall be "in the sum of not less than five dollars and not more than twenty-five dollars," but makes no provision as to who is to determine what fee is to be charged and collected. By reason of this omission, I am of the opinion that the board is required to charge a flat fee of five dollars. That is the minimum fee specified by the Legislature, and at least that much must be charged. On the other hand, no one is given authority to fix a larger fee and of consequence a larger fee cannot be exacted.

16. In answer to your next question, it is my opinion that a clinic which is not a part of a regularly established hospital wholly or partially maintained by an employer for the purpose of furnishing his or its employees with medical or surgical examination or treatment, does not fall within the exception contained in Section 14, and unless excepted by other provisions of the Act, must apply for and obtain a permit to operate.

17. It is my opinion that groups of laymen who meet periodically to discuss with each other how to keep physically fit are not clinics.

18. In answer to your last question, it is my opinion that public health nurses and sanitary inspectors employed by governmental health departments, whether federal, state, county or municipal, are governmental health officers within the purview of Section 1, Clause "b" of the Act.

Very truly yours,

U. S. WEBB, Attorney General.
By LIONEL BROWNE, Deputy.

TWENTY-FIVE YEARS AGO*

EXCERPTS FROM OUR STATE MEDICAL JOURNAL

Vol. VI, No. 9, September, 1908

From some Editorial Notes.

A Good Example.—Elsewhere we print a circular letter which went to all the members of the South Carolina Association, in their journal, and it is well worth your careful consideration. Do not the same conditions apply to your own journal? There is no earthly reason why reputable manufacturers whose products we use should not support your own journal if they do any advertising at all. . . .

Family Addition—Journal of the Oklahoma Medical Association.—And now comes the newest of our states—Oklahoma—bearing gifts and olive branches in its hands and presents to the family of state medical organization journals our youngest born. With June is issued Volume I, Number 1, of the *Journal of the Oklahoma State Medical Association.*

From an article on "On the Relation of Anticyclonic Weather to the Prevalence of La Grippe and Pneumonia on the Northern Hemisphere, With Special Reference to Recent Epidemics of Pneumonia in Chicago and San Francisco" by C. M. Richter, M.D., San Francisco.

It is the presence of the Pacific Ocean and the westerly direction of the winds that insures high winter and cooler summer temperatures for San Francisco. . . .

It will impress you deeply when you study this second chart before you, giving the even temperature and humidity line for San Francisco for every day of the eleven years, 1888 to 1899, in contrast to the lines of pneumonia mortality and air pressure. . . .

From an article on "When Is Gonorrhea Cured?" by John C. Spencer, M.D., San Francisco.

It is a simple answer to the question, "When is gonorrhea cured?" to say offhand, "When the gonococci have disappeared from, or are no longer demonstrable in the patient's secretions."

Upon this bald statement, however, depends a responsibility that is second to none in the entire realm of medicine; one that calls for the highest degree of patient and painstaking perseverance and diagnostic technique. So much depends on our dictum in the pronouncement of a final cure of this social curse that the responsibility almost appalls. . . .

From an article on "Seborrhea and Its Sequelae" by Ernest Dwight Chipman, M.D., San Francisco.

Possibly no disease of the skin is considered more banal and innocuous than seborrhea; and yet a large number of the cases seen by dermatologists are of definite seborrheic nature or in some way are related to what may be called the seborrheic state.

From an article on "Clinical Features of Influenza Since the Pandemic of 1889-1890" by Herbert C. Moffitt, M.D., San Francisco.

When the kind invitation from your committee came to me a short time since to read a paper upon opsonic work and bacteriotherapy, it was accepted without due consideration. It needed little reflection to demonstrate that my personal experience has been as yet entirely too meager to admit of a paper of any value. We all too hastily try to assimilate and in-

(Continued in Advertising Section, Page 17)

BOARD OF MEDICAL EXAMINERS OF THE STATE OF CALIFORNIA*

By Charles B. Pinkham, M. D.
Secretary-Treasurer

News Items

"George Harvey is in the County Jail (Oroville, California), following arrest at the Western Pacific depot as an accused narcotic racketeer. Harvey is said to have signed the name of a railroad employee to a note asking a local doctor to pass drugs to him for delivery to the railroad head, wanting them for an ill person on the train" (Sacramento *Bee,* August 15, 1933). We hope this is the individual concerning whom a warning was published in August "News Items."

"The lure of dark eyelashes . . . a few drops of mysterious fluid . . . blindness or disfigurement—such is the true life story which today impelled the Board of Medical Examiners to launch a determined drive against purveyors of dangerous beauty concoctions. Doctor Pinkham, secretary of the board, revealed a series of pitiful stories of women who would be more beautiful and instead were disfigured for life. One girl in San Francisco submitted to having her eyelashes dyed. The liquid seeped into her eyes, and in a couple of days she was blind. Another woman, a beauty parlor operator, agreed to have a couple of lash-dye salesmen demonstrate their solution on her. Her face was badly disfigured, and the salesmen disappeared. Their business address in Hollywood proved fictitious. 'It is a serious thing,' stated Doctor Pinkham, 'for anyone to use a solution of unknown content around the eyes. Some of them contain analine derivatives, and may either cause blindness or serious dermatitis.' He has suggested to the State Board of Cosmetology that it issue an order prohibiting licentiates from using potent liquids around the eyes. The coöperation of all affected state boards is being sought to drive out all fake beauty experts who have taken a heavy toll of beauty and sometimes of life" (Sacramento *Bee,* August 17, 1933). *The Journal of the American Medical Association* July 29, 1933, page 363, reported at least five severe cases of conjunctodermatitis following the use of a certain eyelash dye, manufactured in Los Angeles.

"What price beauty? The answer was to be found today in records of the Wallach-Aeberli-White manslaughter trial resulting from the death of Mrs. Aleen Farnum during a face-peeling operation. How the subject was 'put to sleep' and layer upon layer of strange drug mysteries applied to her face, was revealed in a detailed description of face rejuvenation methods. . . . As related before the coroner's jury, and alleged by the prosecution at the trial, 'patients' were given sedative capsules the night before the beauty treatment to 'quiet their nerves.' On the date of the 'face peel' another capsule and a hypodermic are administered, the latter assertedly by Dr. I. A. Wallach, a young neighborhood physician. . . ." (Los Angeles *Record,* July 14, 1933.) (Previous entry, August "News Items.")

"Christmas E. White and Miss Anna Aeberli, recently freed on manslaughter charges in connection with the death of Mrs. Aleen Farnum, following a beauty operation, today were under orders to leave California. Municipal Judge Ben Scheinman of Los Angeles gave the pair a suspended sentence of six months each and placed them on two years' probation after they appeared before him and pleaded guilty to

(Continued in Advertising Section, Page 18)

---

* This column strives to mirror the work and aims of colleagues who bore the brunt of society work some twenty-five years ago. It is hoped that such presentation will be of interest to both old and new members.

* The office addresses of the California State Board of Medical Examiners are printed in the roster on advertising page 6.

STUART MEDICAL GASES

Announcing the NEW

Hi-Pure
Nitrous Oxide

99.5% PURE

Our laboratory research extending over a three year period has resulted in a new method of reprocessing nitrous oxide, attaining a purity in excess of 99.5%. This is accomplished by removing the free nitrogen often present up to 5%.

It is believed this will permit using higher percentages of oxygen in nitrous oxide-oxygen anaesthesia.

We are now prepared to furnish this reprocessed 99.5% pure nitrous oxide at a price only slightly higher than that prevailing on our standard product which conforms in all particulars to U. S. P. standards.

We invite inquiries and comments.

We will be glad to show you how to test your Nitrous Oxide for its free nitrogen content

STUART OXYGEN CO.

2857 Ettie Street
OAKLAND
HIgate 0345

211 Bay Street
SAN FRANCISCO
DOuglas 5138

723 East Ninth Street
LOS ANGELES
VAndyke 8484

COLLECTIONS

CREDIT RATINGS
TRACING (Lost Debtors)

RECOVERY:

The whole nation is buzzing with recovery.

NOW is the time for YOU to plan some "RECOVERY."

Send your delinquent accounts to the Bureau and let us help you take definite advantage of the coming business improvement.

Organized and Operated FOR YOU

The Doctors Business Bureau

ESTABLISHED 1916 • • EXCLUSIVELY FOR DOCTORS

310–319 Bank of America Building
GArfield 0460
SAN FRANCISCO

Sixth Floor, Spreckels Building
TRinity 1252
LOS ANGELES

OAKLAND
SALT LAKE CITY

(Continued from Front Advertising Section, Page 30)

Under the provisions of this quarantine order the sale or offering for sale of mussels gathered from the specified areas for the period June 22 to September 30, 1933, is prohibited.—*Weekly Bulletin, California Department of Public Health.*

Court Sustains Conviction of Ginger Jake Peddlers. Harry Lesser and Forrest E. James, ginger "jake" bootleggers, must pay fines of $2,500 each and serve twenty months in jail, and Philip M. Lahn, another member of the ring, will go to prison for seventeen months, all for conspiracy to violate the Federal Food and Drugs Act. The Circuit Court of Appeals recently affirmed their conviction rendered by a jury in the Federal Court, Brooklyn, New York, December 30, 1932.

Lesser, James, and Lahn, trading under various names and through numerous agents in many cities, were found guilty last December of conspiracy to violate the Federal Food and Drugs Act in shipping in interstate commerce quantities of the poisonous "fluid extract of ginger," which caused serious paralysis of victims who, for the most part, used the "jake" as an intoxicant. Some persons took the stuff allegedly for medicinal purposes. Partially empty bottles of the "jake" were found in back alleys and in hobo "jungles." Barrels of the poisonous and spurious "fluid extract of ginger" were labeled, "liquid medicine."

The Federal Food and Drug Administration investigated operations of the racketeers for more than two years. An outbreak of paralysis, due to use of the "jake," occurred in Los Angeles early in 1931, affecting about 150 victims. Because of the carefully camouflaged "bootlegging" practices in shipping the goods, it was exceedingly difficult to collect evidence to identify the parties responsible for the shipments.

The Los Angeles outbreak, however, was not the first one. The first occurred early in 1930, and was attributed to the drinking of poisonous ginger extract shipped by a Boston, Massachusetts, firm. Two members of the concern were prosecuted for conspiracy to violate the Federal Food and Drugs Act and the national prohibition law. A fine of $1,000 was levied against the company, and one member of the outfit is now serving a prison term of two years.

Continued work by federal food and drug officials resulted in running down Lesser, James, and Lahn, who were convicted by a jury in the Federal Court. The defendants appealed the case and were released under a $10,000 bond. Their appeal to the United States Circuit Court of Appeals, New York, N. Y., brought an affirmation of the original conviction.

D. S. Strachan and H. H. Kellogg, Assistant United States Attorneys, Brooklyn, New York, and J. B. O'Donnell of the Solicitor's Office of the Department of Agriculture, prosecuted the appeal before the appellate court.

The Struggle Against Dietary Delusions.—James A. Tobey, Dr. P. H., formerly associate editor of the *American Journal of Public Health,* wrote as follows in *Food Facts:*

Quackery always flourishes in a scientific era. The present century has been noteworthy for its remarkable advances in the science of nutrition. It is not strange, therefore, to find the field of dietetics invaded by a host of food faddists and charlatans who are constantly endeavoring to foist upon the public many unbalanced theories and garbled facts about what is best to eat.

Since these purveyors of false information about food usually shout louder and more vehemently than do the ethical authorities on dietetics, the populace frequently is reduced to a state of uncertainty and confusion in this matter. This is unfortunate, because proper nutrition is one of the most important aspects

CANYON SANATORIUM
REDWOOD CITY, CALIFORNIA

An Open Air Sanatorium for the Treatment of Tuberculosis and Diseases of the Chest.

NESTLED IN THE FOOTHILLS
For booklet giving full particulars write **RALPH B. SCHEIER, M. D.,** *Medical Director*
San Francisco Office: 516 SUTTER STREET *Telephone* DOUGLAS 4486

of personal hygiene, and a well-balanced diet is essential to the promotion and maintenance of good health.

In order to avoid the contaminating influence of the fakir in the realm of nutrition, it is necessary to recognize the species and also to understand who are the reputable authorities. Among the several classes of charlatans in dietetics are the members of the healing cults other than regular medicine who generally seem to have bizarre notions about the rôle of food in physical welfare. These cultists exploit their fallacies through tabloid newspapers, cheap magazines, and their own practice, such as it is.

Then there are the deluded scientists and pseudoscientists who attribute all the ills of mankind to some one food, such as white bread or meat, or to harmless combinations of foods, such as mixtures of starches and proteins. These protagonists of pet theories are invariably unbalanced in their ideas and as harmful in their teachings as the selfish propagandists who have dietetic nostrums to sell for personal gain.

Beware of the alleged savant on nutrition who tries to promote a restricted system of diet, such as vegetarianism, the use of raw foods, exclusive whole wheat regimens, or abstinence from this or that type of accepted sustenance. These faddists rant about the menace of meat, which is no menace at all; or the iniquities of sugar, which is never dangerous in reasonable quantities; or the evils of coffee, tea, salt and various other commodities, all of which have legitimate places in human nutrition.

One of the most pernicious of the ravings of food fakirs is the baseless charge that white bread is somehow detrimental to health. As a necessary and desirable part of a well-balanced diet, any kind of bread, whether brown, black, white or any other color, is one of our most useful and nutritious foods. It is primarily an energy food, one of the cheapest and best sources of the fuel needed for the human machine. Wheat now contributes about one-fourth of the calories of the American diet, an amount which all authorities are agreed is not excessive.

In times of economic depression bread is literally the staff of life. "Build the dietary around bread and milk" is a maxim quoted with approval by such a leading authority as Professor Henry C. Sherman of Columbia University, who has written much excellent advice on emergency nutrition. Doctor Sherman recommends that the family food budget in times of economic stress be devoted to expenditures for these three essential groups of foods: (1) milk and its products; (2) fruit and/or vegetables; and (3) bread and other cheap sources of calories. What kind of bread does not matter. As stated by a committee of food specialists assembled by the United States Department of Agriculture "white and whole wheat breads are both wholesome foods. They are among the most important and cheapest sources of energy and protein in the diet."

Another of the erroneous dicta of the food faddist is the crass assertion that proteins and sugars or starches should not be mixed in the diet. Nature knew better than this, for she combined these substances in many natural foods. Milk, for example, commonly known as "the most nearly perfect food," contains both protein and carbohydrate. The same is true of potatoes, of wheat, and of many staple vegetables. It is virtually impossible to partake of any combination of nutritious foods without some mixture of protein and starches, and there is absolutely no good reason why they should not be mixed.

"Acidosis" is often another byword with the food faddist. This term is much overworked, as the condition of true acidosis rarely occurs, regardless of all the earnest hokum written about it. Milk, bread, and fruits are all base-forming foods, and if these desirable victuals comprise the foundation of the diet, as they should, the chances of acidosis are so remote as to be negligible.

(Continued on Next Page)

Bausch & Lomb
New Ophthalmic Chair
Write for literature

A NEW
OPHTHALMIC CHAIR
by BAUSCH & LOMB

has been developed for your patient's comfort and your own convenience.

This new chair gives you a coöperative, relaxed patient—the chair will respond to your slightest need.

It has every needed and desired feature—instant adaptability for the adult and the child—bakelite arms—chromium plate on all bright parts—professional and attractive appearance.

RIGGS OPTICAL COMPANY
Established in Sixty Western Cities
ASSOCIATED OPTICAL COMPANY
LOS ANGELES SAN DIEGO PHOENIX LONG BEACH SANTA ANA

THE SAN FRANCISCO BANK
SAVINGS COMMERCIAL TRUST
INCORPORATED FEBRUARY 10TH, 1868
One of the Oldest Banks in California, the Assets of which have never been increased by mergers or consolidations with other Banks.

MEMBER ASSOCIATED SAVINGS BANKS OF SAN FRANCISCO
526 California Street, San Francisco, Cal.
June 30th, 1933
Assets **$159,206,708.91**
Capital, Reserve and Contingent Funds **$6,500,000.00**
The following accounts stand on the Books at **$1.00** *each, viz.:*
Bank Buildings and Lots - - - - - (Value over **$2,100,000.00**)
Other Real Estate - - - - - - - - (Value over **$520,000.00**)
Pension Fund - - - - - - - - - - (Value over **$800,000.00**)

MISSION BRANCH .... Mission and 21st Streets
PARK-PRESIDIO BRANCH .... Clement St. and 7th Ave.
HAIGHT STREET BRANCH .... Haight and Belvedere Streets
WEST PORTAL BRANCH .... West Portal Ave. and Ulloa St.

Interest on Deposits is Computed Monthly and Compounded Quarterly, and may be withdrawn quarterly.

(Continued from Preceding Page)

The food charlatan likes to declare that various major ills are due to defective diets. In this category he puts cancer, kidney disease, anemia, and various other maladies. There is not one scintilla of evidence to show that diet plays any part whatever in the development of cancer and malignant conditions, nor is there much real evidence to indicate that diet exerts a very prominent influence in Bright's disease, nephritis, and other kidney afflictions.

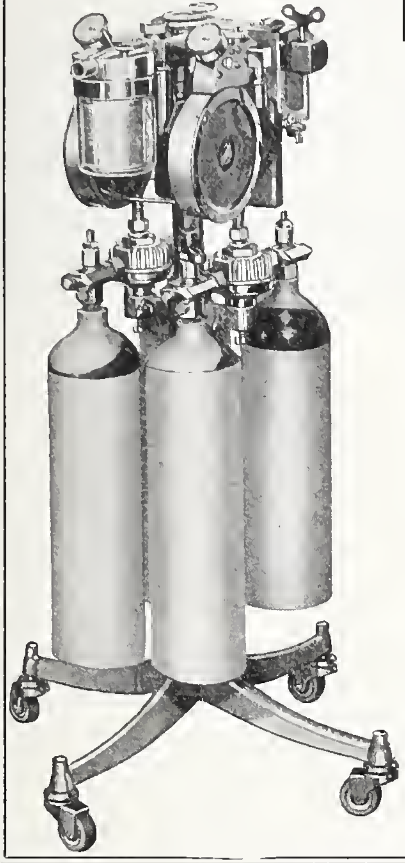
There are, of course, a number of dietary deficiency diseases, such as scurvy, beriberi, pellagra, rickets, goiter, and nutritional anemia, which may be due to an unbalanced diet, one which is lacking in certain vitamins or minerals, but these maladies are relatively rare in those parts of the country where adequate diets are available and are generally consumed. In certain parts of the South, where diets are restricted and frequently defective, pellagra is common, but even this disease can be corrected by the employment of dried yeast, milk, and various other common foods rich in vitamin G.

Put into its simplest formula, a well-balanced and adequate diet always results when the basis of the daily fare consists of the so-called protective foods, milk and dairy products, fruits, and green leafy vegetables. Eggs may also be placed in this protective category, which was so designated by Professor E. V. McCollum of Johns Hopkins University because the foods included a supply of ample amounts of vitamin A and calcium, and thus serve to protect against the deficiencies of other common foodstuffs.

Put into somewhat more scientific form, a proper diet must provide the following essentials:

1. Fats and carbohydrates to yield energy for the human mechanism.
2. Protein to build, repair and replace bodily tissues and supply other nutrients.
3. Minerals to construct bones and teeth and assist in other bodily processes.
4. Fluids to act as solvents, carriers, and regulators.

THE ANESTHETIST MUST HAVE FAULTLESS EQUIPMENT



PERIODICALLY, we call to inspect your anesthetic equipment. This service is offered whether you use our equipment or not. It is based on the realization that *the anesthetist must have faultless equipment.* Day and night emergency service is maintained constantly for servicing and supplying apparatus for purchase or rental.

We distribute several lines of equipment, all made to the highest known standards. And, while none of it is made in our own plant, it is subjected to our own rigid inspection. The same policy of critical analyses of mechanism prevails with the same relentless vigilance as with our own medical gases. It is a fixed policy.

Certified Gases
NITROUS OXIDE · ETHYLENE · CARBON DIOXIDE
CARBOGEN · MEDICAL OXYGEN

CERTIFIED
LABORATORY PRODUCTS, LTD.
1379 Folsom St., San Francisco 1503 Gardena Ave., Glendale, Calif.
WEST COAST HOSPITAL SUPPLY COMPANY
Pacific Northwest Distributors
25 E. Sixth Street, Portland, Ore. 408 Battery Street, Seattle, Wash.

5. Vitamins to promote growth, reproduction, good health, vigor, resistance to infection and proper bodily functioning.

Other desirable elements in the well-balanced diet are a little roughage to promote peristalsis, and digestibility and palatability. These sagacious principles are, of course, concerned with the quality rather than quantity of the diet. The amount of food required by an individual depends upon the sex, age, stature, mode of life, race, and other circumstances. In general, the quantity as measured in calories will be somewhere between 2,000 and 6,000 of these units of energy. A sedentary worker can usually subsist on about 2,800 calories, whereas a hard-working day laborer—if there still are any—would need as many as 6,000.

The seeker after nutritional knowledge should look for it in the books and writings of the acknowledged authorities and not in the drivel of the food faddists, physical culturists and sectarian healers. He should look for guidance to such experts as Sherman, McCollum, Rose, Lusk, Mendel, Eddy, McLester, and other eminent scientists of similar standing. Lists of reliable textbooks on nutrition can be obtained from such reputable agencies as the American Public Health Association of New York and from reviews and notices in professional magazines of an ethical nature.

Extensive as is our present knowledge of nutrition, there is still a large unexplored field and the future will unquestionably see many more brilliant and practical contributions to this important science. What we already know is reliable and sound, and should be utilized to the advantage of the public. The people should, however, be alert to shun the false precepts of the food faddists and put their faith in the teachings of the real authorities on nutrition.

New Food and Drug Bill Provides Effective Protection to Consumers.—Certain harmful and deceptive practices that injure or cheat consumers of foods and drugs are still prevalent because they are not prohibited by the terms of the Federal Food and Drugs Act now in effect, says W. G. Campbell, Chief of the Federal Food and Drug Administration.

The new food and drug bill, prepared under the direction of Assistant Secretary R. G. Tugwell, with the approval of President Roosevelt, and recently transmitted to Congress by Secretary Wallace and introduced by Senator Royal S. Copeland, will, if enacted, make the harmful and deceptive practices illegal and will enable the department to control them, declared Mr. Campbell.

When a Pittsburgh man died several months ago after consuming medicine heavily impregnated with radium, two pertinent questions were asked: Why was the indiscriminate sale of this highly dangerous medicine permitted? Why was the manufacturer of it not prosecuted under the Federal Food and Drugs Act? The answer, according to Mr. Campbell, is simply that the terms of that Act give the department no control whatever over the sale of dangerous medicines, provided they are not adulterated or falsely or fraudulently labeled. It so happened that the medicine which was fatal to this Pittsburgh resident was not adulterated or falsely labeled in any particular and, therefore, met the limited requirements of the Federal Food and Drugs Act.

The proposed new bill would give to the department authority to surround the sale of dangerously potent medicines with such safeguards as would prevent their indiscriminate use to the detriment of consumers.

The use of deceptively shaped containers and the slack filling of food packages cheats consumers continually, said Mr. Campbell; yet such practices are not generally amenable to the Food and Drugs Act.

(Continued on Next Page)

St. Luke's Hospital
SAN FRANCISCO
A Limited General Hospital of 200 Beds

BENJAMIN H. DIBBLEE, *President*
I. C. KNOWLTON, *Secretary*

Executive Committee
ALANSON WEEKS, M. D., *Chairman*
GEORGE D. LYMAN, M.D.
HAROLD P. HILL, M. D.
W. G. MOORE, M. D.

HOWARD H. JOHNSON, M. D.
Secretary and Medical Director

Fully approved by the American College of Surgeons and the American Medical Association for Resident and Intern Training.

Limited Facilities for Part-Pay Treatment

SEVEN YEARS' USE
has demonstrated the value of
THE SURGICAL SOLUTION
of
MERCUROCHROME,
H. W. & D.
in
Preoperative Skin Disinfection

•

This preparation contains 2% Mercurochrome in aqueous-alcohol-acetone solution and has the advantages that:

Application is not painful.
It dries quickly.
The color is due to Mercurochrome and shows how thoroughly this antiseptic agent has been applied.
Stock solutions do not deteriorate.

•

Now available in 4, 8 and 16 oz. bottles, and in special bulk package for hospitals.

Literature on request
HYNSON, WESTCOTT & DUNNING, Inc.
Baltimore, Maryland

Hydro-Electro and Physiotherapy Building

Alexander Sanitarium
Incorporated
Belmont, California
Telephone Belmont 40 P. O. Box 27

Hydro-Electro and Physiotherapy Treatments. Specializing in Recuperative and Nervous Cases. Homelike Atmosphere. Absolutely Modern in every respect. Inspection invited.

22 Miles from San Francisco—Situated in the beautiful foothills of Belmont, on Half Moon Bay Boulevard. The grounds consist of seven acres studded with live oaks and blooming shrubbery.

Just the place for the overworked, nervous and convalescent. Number of patients limited. Physician in attendance.

Address ALEXANDER SANITARIUM
Phone Belmont 40 Box 27, Belmont, Calif.

(Continued from Preceding Page)

The revised bill, as introduced recently, would make unlawful those practices that deceive consumers regarding the quantity as well as regarding the quality of the foods they buy.

The proposed new bill provides heavier penalties for those who sell adulterated and misbranded products, penalties that, in the opinion of Mr. Campbell, will more effectively deter those who for gain are willing deliberately to violate the Act. The Federal Food and Drugs Act now in effect provides such small fines that some unscrupulous manufacturers look upon the fines imposed as a license fee requiring only a small portion of the profits made on their illegitimate transactions.

Under the operations of the Federal Food and Drugs Act manufacturers of proprietary medicines have been required to remove from the labels of their various concoctions the false and fraudulent claims regarding curative potency. In many instances the manufacturer continues to make the same false and fraudulent claims in advertising matter in the press, on billboards, over the radio, and by other means. The Federal Food and Drugs Act has no jurisdiction over advertising which does not accompany the package, although it is apparent that more people are influenced by advertising than by label statements. The proposed new bill would correct this defect in the law and would penalize the manufacturer for false advertising as well as for false labeling.

The new bill would apply to cosmetics as well as to foods and drugs. It would require more informative labeling so that consumers may know more about the composition of the foods and drugs they buy. It would authorize the establishment of legal definitions and standards for food products which will enable the department more readily to check various forms of adulteration and misbranding. The bill contains provisions which will make it possible for the government to obtain at less cost conclusive evidence of

SOILAND CLINIC

Drs. Soiland, Costolow and Meland

1407 South Hope Street, Los Angeles, Calif.

Telephone PRospect 1418

HOURS: 9:00 to 4:00

A medical group organized and equipped for the study, diagnosis and treatment of neoplastic and allied disease.

ALBERT SOILAND, M D.
WM. E. COSTOLOW, M. D.
ORVILLE N. MELAND, M. D.
A. L. LINDBERG, M. D., ***Pathologist***
A. H. WARNER, Ph. D., ***Physicist***

violations of the Act. The Secretary of Agriculture would have authority to disseminate such information regarding any food, drug or cosmetic as he deems necessary in the interests of public health and for the protection of the consumer against fraud.

The Federal Food and Drugs Act has been in operation for more than a quarter of a century, and according to Mr. Campbell has brought about a marked improvement in the food and drug supply of the nation. That it does not cover all practices, in the manufacture and sale of foods and drugs that are inimical to consumers has long been apparent, and efforts have been made from time to time to have it strengthened by amendments. Some five or six amendments have been enacted, but a complete revision of the Act is now highly desirable, declares Mr. Campbell, in order that consumers may have that degree of protection they have a right to expect.

The key to the world of the future and to the wise fraternity of all races lies in the liberation of the child from the bondage of others' error and sin; from disease and debility, from desertion and want, from ignorance and passion above all, that are visited on the helpless to the third and fourth generation. The heart of a child is friendly to all; like the baby of Della Robbia its limbs are bound, but its arms go out to its fellows. Its single claim is to be allowed to love; its one revenge to die if, for an hour, we neglect it (Roman Rolland).—*Weekly Bulletin, California Department of Public Health.*

Those desiring to reduce their weight may accomplish this by the simple expedient of reducing the amount of all food eaten proportionately. Do not attempt to omit altogether any particular item. Eat a restricted amount of a large variety of foods (Surgeon General H. S. Cumming).—*Weekly Bulletin, California Department of Public Health.*

Golden State—
Dealers in Health

● It is the doctor's privilege to help boys and girls in their business of growing. It is his satisfaction to read health in their sparkling eyes. To hear it in their laughter.

● In this respect Golden State Company may feel a kinship with the doctor, for Golden State is helping to build lasting health for tens of thousands of California children. For nearly a third of a century Golden State has taken the lead in the perfection and protection of milk purity, so definitely—so unqualifiedly—that the name Golden State on a dairy product has come to be synonymous with highest quality.

● Your patients know the name Golden State. It is the best known California brand of dairy products. When you recommend Golden State Milk—and you can recommend it with the utmost confidence*—you will note how gladly they accede.

GOLDEN STATE DAIRY PRODUCTS

Golden State
COMPANY, LTD.
Plants Throughout California
Research Laboratories located at
425 Battery Street, San Francisco
1120 Towne Avenue, Los Angeles

*Does the Golden State Milkman deliver milk to *your* home? You would appreciate it.

NRA MEMBER U.S. WE DO OUR PART

Colfax School for the Tuberculous

Colfax, California

(Altitude 2400 feet)

This institution is for the treatment of medical tuberculosis and of selected cases of extrapulmonary (so-called surgical) tuberculosis.

The Colfax School for the Tuberculous consists of five Hospital Units with beds for patients who come unattended and a Housekeeping Cottage Colony for patients and their families.

The Colfax School for the Tuberculous offers the following advantages:

1. Patients are given individual care by experienced tuberculosis specialists. The patient is treated according to his individual needs.

2. Patients are taught how to secure an arrest of their disease, how to remain well when once the disease is arrested, and how to prevent the spread of the disease.

3. Patients have the advantage of modern laboratory aids to diagnosis and of all modern therapeutic agencies.

4. The climate of Colfax enables the patient to take the cure without discomfort twelve months in the year. We believe climate is secondary to medical supervision and rest, but the fact remains that it is easier to "cure" under good climatic conditions than where these climatic conditions are absent.

5. Colfax is accessible. It is on the main line of the Ogden Route of the Southern Pacific R. R. and has excellent train service. It can be reached by paved highway, being on the Victory Highway, with paved roads all the way to Colfax.

For further information address

ROBERT A. PEERS, M. D., *Medical Director*
Colfax, California

NEXT ANNUAL SESSIONS

California Medical Association, Riverside, April 30–May 2, 1934
American Medical Association, Cleveland, Ohio, June 11–15, 1934

0

CALIFORNIA
AND
WESTERN MEDICINE

Owned and Published Monthly by the California Medical Association
FOUR FIFTY SUTTER, ROOM 2004, SAN FRANCISCO
ACCREDITED REPRESENTATIVE OF THE CALIFORNIA AND NEVADA MEDICAL ASSOCIATIONS

VOLUME XXXIX
NUMBER 4

OCTOBER · 1933

50 CENTS A COPY
$5.00 A YEAR

CONTENTS AND SUBJECT INDEX

SPECIAL ARTICLES:

Cancer—Present Trends in Its Treatment. By Arthur C. Christie, Washington, D. C. 217

Procedures for Immunization Against Communicable Diseases. By Edward B. Shaw, San Francisco; Henry Dietrich, Los Angeles; and Thomas C. McCleave, Oakland 219
Discussion by W. P. Lucas, San Francisco; Clifford Sweet, Oakland; W. H. Kellogg, Berkeley.

Cold Quartz Ultraviolet Light Therapy in Urology. By J. C. Negley, Los Angeles 226

Diverticulosis of the Duodenum. By Kenneth S. Davis, Los Angeles 229
Discussion by John D. Lawson, Woodland; Milton J. Geyman, Santa Barbara; Carl H. Parker, Pasadena.

Fractures—Their Treatment. By Frank J. Breslin, Los Angeles 234
Discussion by Ellis Jones, Los Angeles; Frederick G. Linde, San Francisco; Steele F. Stewart, Los Angeles.

The Liver in Chronic Human Amebiasis—Its Relative Size. By Luther Musson Boyers, Berkeley 239
Discussion by Alfred C. Reed, San Francisco; John V. Barrow, Los Angeles; Rawson J. Pickard, San Diego.

Vaccination for Smallpox—The Three-Point Chisel Method. By George M. Stevens, Los Angeles 243
Discussion by J. C. Geiger, San Francisco; John J. Sippy, Stockton; Alex M. Lesem, San Diego.

Fractures of the Spine. By James T. Watkins, San Francisco 246
Discussion by Rodney F. Atsatt, Santa Barbara; John C. Wilson, Los Angeles.

Functional Diseases of the Intestinal Tract. By Fuller Bailey, Salt Lake City, Utah 250
Discussion by F. A. Speik, Los Angeles; Eugene S. Kilgore, San Francisco.

Significance of Occult Blood in Stools by the Benzidin Method. By John F. Quinlan, San Francisco 254

THE LURE OF MEDICAL HISTORY:

Thomas Aquinas. By Felix Cunha, San Francisco 256

CLINICAL NOTES AND CASE REPORTS:

Factitial Proctitis. By George E. Malmgren, Los Angeles 258

Purulent Meningitis. By Elmer M. Bingham, Riverside 259

Mercurial Dermatitis. By W. L. Marxer, Los Angeles 261

Addison's Disease. By William Fitch Cheney, San Francisco 262

BEDSIDE MEDICINE:

Burns 264
Discussion by W. C. Adams, Oakland; John H. Breyer, Pasadena; Sterling Bunnell, San Francisco.

EDITORIALS:

NRA and the Medical Profession 269
Study of Public Health Problems—A Plea for County Society Coöperation 270
California's First Medical Author 270

EDITORIAL COMMENT:

Immunologic Effects of Alkaline Diets. By W. H. Manwaring, Palo Alto 272

Perinephritis. By Thomas E. Gibson, San Francisco 272

Certain Relationships Between the Pancreas and the Liver in Carbohydrate Metabolism. By W. E. Macpherson, Loma Linda 273

STATE MEDICAL ASSOCIATIONS:

CALIFORNIA MEDICAL ASSOCIATION 274
- Minutes of Council Meeting of May 27, 1933 274
- Digest, Executive Committee Minutes, Meeting of August 19, 1933 277
- The Woman's Auxiliary to the California Medical Association 282

NEVADA STATE MEDICAL ASSOCIATION 283

C. M. A. DEPARTMENT OF PUBLIC RELATIONS 284

MISCELLANY:

News 286
Correspondence 287
Twenty-Five Years Ago 288
Board of Medical Examiners of the State of California 288
California Medical Association Directories .... Adv. pages 2, 4, 6
Book Reviews .... Adv. page 12

ADVERTISEMENTS—INDEX:

.... Adv. page 8

"Entered as second-class matter at the post office at San Francisco, California, under the Act of March 3, 1879." Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized August 10, 1918.

GREENS' EYE HOSPITAL

. . . for Consultation, Diagnosis, and Treatment of the Eye

BUSH AT OCTAVIA STREET

San Francisco

Telephone
WEst 4300

THE HOSPITAL

As an aid in the study and diagnosis of eye conditions, Greens' Eye Hospital maintains a fully equipped

Ear, Nose, and Throat Department

This department is conducted on the same basis as the eye clinic and is open to all patients for the treatment of Ear, Nose, and Throat.

●

EMERGENCY EYE SERVICE

A twenty-four hour emergency eye service including Sundays and holidays is now available with an Ophthalmologist on duty.

Staff

OPHTHALMOLOGY
Aaron S. Green, M. D.
Louis D. Green, M. D.
Martin I. Green, M. D.
Einar V. Blak, M. D.
Vincent V. Suglian, M. D.

OTOLARYNGOLOGY
Lafayette P. Monson, M. D.

Address Communications to Superintendent

BUSH

Patronize Your Home Firm

A CALIFORNIA CORPORATION

X-RAY AND ELECTROMEDICAL EQUIPMENT

BUSH ELECTRIC CORPORATION

334 Sutter Street
SAN FRANCISCO, CALIF.
EXbrook 5090

2016 Wilshire Boulevard
LOS ANGELES, CALIF.
EXposition 1189

BUSH

Officers of the California Medical Association

General Officers

President—George G. Reinle, 204 Dalziel Building, 532 Fifteenth Street, Oakland.

President-Elect—Clarence G. Toland, 902 Wilshire Medical Building, 1930 Wilshire Boulevard, Los Angeles.

Speaker of House of Delegates—Edward M. Pallette, 502 Wilshire Medical Building, 1930 Wilshire Boulevard, Los Angeles.

Vice-Speaker of House of Delegates—John H. Graves, 977 Valencia Street, San Francisco.

Chairman of Council—T. Henshaw Kelly, 830 Medico-Dental Building, 490 Post Street, San Francisco.

Chairman of Executive Committee—Karl L. Schaupp, 530 Medico-Dental Building, 490 Post Street, San Francisco.

Chairman of the Committee on Public Relations—Charles A. Dukes, 601 Wakefield Building, 426 Seventeenth Street, Oakland.

Secretary-Treasurer—Emma W. Pope, Four Fifty Sutter Street, Room 2004, San Francisco.

Editor—George H. Kress, 945 Roosevelt Building, 727 West Seventh Street, Los Angeles.

General Counsel—Hartley F. Peart, Room 1800, 111 Sutter Street, San Francisco.

Associate General Counsel—Hubert T. Morrow, Van Nuys Building, 210 West Seventh Street, Los Angeles

Councilors

District Councilors

First District—Imperial, Orange, Riverside, and San Diego Counties, W. W. Roblee (1935), 202 Mission Inn Rotonda, Riverside.

Second District—Los Angeles County, Carl R. Howson (1936), 711 Merritt Building, 307 West Eighth Street, Los Angeles.

Third District—Kern, San Bernardino, San Luis Obispo, Santa Barbara and Ventura Counties, Henry J. Ullmann (1934), 1520 Chapala Street, Santa Barbara.

Fourth District—Calaveras, Fresno, Inyo, Kings, Madera, Mariposa, Merced, Mono, San Joaquin, Stanislaus, Tulare and Tuolumne Counties, Fred R. DeLappe (1935), 218 Beaty Building, 1024 J Street, Modesto.

Fifth District—Monterey, San Benito, San Mateo, Santa Clara and Santa Cruz Counties, Alfred L. Phillips (1936), Farmers and Merchants Bank Building, Santa Cruz.

Sixth District—San Francisco County, Karl L. Schaupp (1934), 530 Medico-Dental Building, 490 Post Street, San Francisco.

Seventh District—Alameda and Contra Costa Counties, Oliver D. Hamlin (1935), Federal Realty Building, Oakland.

Eighth District—Alpine, Amador, Butte, Colusa, El Dorado, Glenn, Lassen, Modoc, Nevada, Placer, Plumas, Sacramento, Shasta, Sierra, Sutter, Tehama, Yolo, and Yuba Counties, C. E. Schoff (1936), 322 Medico-Dental Building, 1127 Eleventh Street, Sacramento.

Ninth District—Del Norte, Humboldt, Lake, Marin, Mendocino, Napa, Siskiyou, Solano, Sonoma and Trinity Counties, Henry S. Rogers (1934), Petaluma.

Councilors-at-Large

George G. Hunter (1935), 910 Pacific Mutual Building, 523 West Sixth Street, Los Angeles.

C. O. Tanner (1936), 3255 Fourth Street, San Diego.

William H. Kiger (1934), 911 Wilshire Medical Building, 1930 Wilshire Boulevard, Los Angeles.

Morton R. Gibbons (1935), Union Square Building, 350 Post Street, San Francisco.

T. Henshaw Kelly (1936), 830 Medico-Dental Building, 490 Post Street, San Francisco.

Junius B. Harris (1934), Medico-Dental Building, 1127 Eleventh Street, Sacramento.

Standing Committees

Executive Committee

The President, the President-elect, the Speaker of the House of Delegates, the Chairman of the Council, the Chairman of the Auditing Committee, the Chairman of the Committee on Public Relations, the Secretary-Treasurer and the Editor. (Karl L. Schaupp, chairman; Emma W. Pope, secretary.)

Auditing Committee

O. D. Hamlin	Oakland	1933
Morton R. Gibbons	San Francisco	1933
Karl L. Schaupp (Chairman)	San Francisco	1933

Committee on Associated Societies and Technical Groups

R. Manning Clarke (Chairman)	Los Angeles	1934
Clifford Sweet	Oakland	1935
William H. Geistweit	San Diego	1936

Committee on Extension Lectures

Robert T. Legge (Chairman)	Berkeley	1934
James F. Churchill	San Diego	1935
J. Homer Woolsey	San Francisco	1936

Secretary ex officio

Committee on Health and Public Instruction

Langley Porter	San Francisco	1934
Fred B. Clarke (Chairman)	Long Beach	1935
W. R. P. Clark	San Francisco	1936

Committee on History and Obituaries

George D. Lyman	San Francisco	1934
Charles D. Ball (Chairman)	Santa Ana	1935
J. Marion Read	San Francisco	1936

Secretary ex officio

Editor ex officio

Committee on Hospitals, Dispensaries and Clinics

Karl L. Schaupp	San Francisco	1934
John C. Ruddock	Los Angeles	1935
Daniel Crosby (Chairman)	Oakland	1936

Committee on Industrial Practice

Harry E. Zaiser	Orange	1934
Morton R. Gibbons (Chairman)	San Francisco	1935
Mott H. Arnold	San Diego	1936

Committee on Medical Defense

Henry Snure, Sr. (Chairman)	Los Angeles	1934
George G. Reinle	Oakland	1935
Fred R. De Lappe	Modesto	1936

Committee on Medical Economics

Willard Stone	Pasadena	1934
John H. Graves (Chairman)	San Francisco	1935
William R. Molony, Sr.	Los Angeles	1936

Committee on Medical Education and Medical Institutions

H. A. L. Ryfkogel	San Francisco	1934
George Dock (Chairman)	Pasadena	1935
George G. Hunter	Los Angeles	1936

Committee on Membership and Organization

LeRoy Brooks	San Francisco	1934
Harry H. Wilson (Chairman)	Los Angeles	1935
Dewey R. Powell	Stockton	1936

Secretary ex officio

Committee on Publications

Percy T. Magan (Chairman)	Los Angeles	1934
Ruggles A. Cushman	Talmage	1935
Frederick F. Gundrum	Sacramento	1936

Secretary ex officio

Editor ex officio

Committee on Public Policy and Legislation

E. T. Remmen	Glendale	1934
Junius B. Harris (Chairman)	Sacramento	1935
Fred R. De Lappe	Modesto	1936

President ex officio

President-elect ex officio

Committee on Scientific Work

Lemuel P. Adams	Oakland	1934
J. Homer Woolsey	Woodland	1935
F. M. Pottenger	Monrovia	1936

H. O. Koefod, Secretary of Section on General Medicine, ex officio

Edwin M. Taylor, Secretary of Section on General Surgery, ex officio

Emma W. Pope (Chairman), ex officio

Committee on Arrangements (Annual Session 1934)

William W. Roblee (Chairman)	Riverside	1934
Hervey S. Faris	Riverside	1934
G. Wayland Coon	Riverside	1934
Bon O. Adams	Riverside	1934
Arthur W. Walker	Riverside	1934

Committee on Public Relations

The Committee on Public Relations consists of the chairmen of the following standing committees and of certain general officers of the Association, all serving ex officio. The chairman of the committee is Dr. Charles A. Dukes, the secretary is Dr. Emma W. Pope. The director of the Department of Public Relations is Dr. Walter M. Dickie.

Fred B. Clarke	Chair., Com. on Health and Public Instruction
Daniel Crosby	Chair., Com. on Hospitals, Dispensaries, Clinics
Morton R. Gibbons	Chair., Com. on Industrial Practice
Harry H. Wilson	Chair., Com. on Membership and Organization
John H. Graves	Chair., Com. on Medical Economics
Junius B. Harris	Chair., Com. on Public Policy and Legislation
Charles A. Dukes	Chair., Cancer Commission
George G. Reinle	President of the California Medical Association
Clarence G. Toland	President-elect
Emma W. Pope	Secretary-Treasurer

Communications for the Public Relations Department should be addressed to the Director, Dr. Walter M. Dickie, Room 2039, 450 Sutter Street, San Francisco.

Cancer Commission

Charles A. Dukes (Chairman)	Oakland	1934
Lyell C. Kinney (Vice-Chairman)	San Diego	1934
Alson R. Kilgore (Secretary)	San Francisco	1934
Orville Meland (Sec'y for Southern Section)	Los Angeles	1935
A. Herman Zeiler	Los Angeles	1935
Gertrude Moore	Oakland	1935
Harold Brunn	San Francisco	1936
Henry J. Ullmann	Santa Barbara	1936
Clarence G. Toland	Los Angeles	1936

Communications for the Cancer Commission should be addressed to the Secretary, A. R. Kilgore, M. D., Room 2039, 450 Sutter Street, San Francisco.

(Roster lists continued on advertising page 4)

SPECIAL MOTORCYCLE SERVICE

HOURS: Week Days, 8 A. M. to 9 P. M. . . . . Sundays, 9-1, 6-8

Special attention given all telephone prescriptions. Four stores will furnish special motorcycle service delivery to any part of the city at any hour of the day or evening.

Broemmel's Prescription Pharmacies

ESTABLISHED 1868

SERUMS ✓ VACCINES ✓ ANTITOXINS

Third Floor Medico-Dental Bldg.
Post and Mason Streets
Telephones: GArfield 0265-0266

California and Steiner Streets
Telephones: WEst 0558-0559
Fourth Floor, 450 Sutter
Telephones: GArfield 4486-4487

Second Floor, Fitzhugh Bldg.
Post and Powell Streets
Telephones: GArfield 4417-4418-4419-4420-4421-4422

LAS ENCINAS - - - PASADENA, CALIF.

A SANITARIUM FOR THE TREATMENT OF GENERAL AND NERVOUS DISEASES

Board of Directors: GEORGE DOCK, M. D., *President;* W. JARVIS BARLOW, M. D.; STEPHEN SMITH, M. D.; CHARLES W. THOMPSON, M. D.; GEORGE HUNTER, M. D.

Address: STEPHEN SMITH, M.D., F.A.C.P., or CHARLES W. THOMPSON, M.D., F.A.C.P., Medical Directors
LAS ENCINAS, PASADENA, CALIFORNIA

San Diego Health Department Celebrates.—July 5, 1933, was the fifty-seventh anniversary of the establishment of the San Diego City Health Department. In 1876, when the local Board of Health was created, San Diego was a village of two thousand persons. The newly organized Board of Health was confronted with a number of serious problems. Communicable diseases, particularly smallpox, were widely prevalent. General sanitation demanded attention, as well as the community water supply. Many problems were involved with reference to the proper handling of whales at the old whaling station, La Playa, on Point Loma. In those days this was one of the major whaling stations on the Pacific Coast. The old records reveal that those who were engaged in the business were lax in exercising proper methods for disposing of the huge creatures. The prevailing west winds carried unpleasant odors to the residents of San Diego.

The growth of this city from a village of 2,000 persons in 1876 to 167,000 in 1933 has brought increased problems in public health administration, but this community has developed a strong organization and provided funds to safeguard the public health in a most commendable manner under the direction of Dr. Alex M. Lesem.—*Weekly Bulletin, California Department of Public Health.*

Immunity is, if you like, an armoring of our modern bodies against our modern germ enemies as ancient knights encased themselves in steel against the slings and arrows of their ancient human enemies. To make the metaphor modern, it is like fireproofing the "temple of the body" against the fires of disease, so that it cannot burn; or like putting something in your auto radiator so that it cannot freeze. It is, as a method of prevention, the most conclusive that the body itself can of itself provide, and in principle is the most conclusive of any method that can be provided in any way whatever—except the method of abolishing disease entirely, which latter would make immunity unnecessary.—H. W. Hill, M. D.

Dewar & Hare Electric Co.

Manufacturers and Distributors

X-Ray and Physiotherapy Equipment
and
Aurora X-Ray Corporation Products

X-Ray Apparatus ✓ Quartz Ultra Violet Lamps
Infra Red Lamps ✓ Accessories

"Thermotax" Diathermy ✓ "Electrotax" Sine Wave

386 SEVENTEENTH STREET, *near Franklin St.*
Telephone GLencourt 9273 Oakland, California

A San Francisco Organization

Shumate Drug Company

DISPENSING CHEMISTS

Catering to the Medical Profession
Since 1890

Officers of Scientific Sections of California Medical Association

Anesthesiology

Chairman, John Miller Wilson, 605 Professional Building, Pasadena.
Secretary, Ethel Righetti, 319 Walnut Street, San Francisco.

Dermatology and Syphilology

Chairman, Louis F. X. Wilhelm, 410 California Medical Building, 1401 South Hope Street, Los Angeles.
Vice-Chairman, C. E. Schoff, 322 Medico-Dental Building, 1127 Eleventh Street, Sacramento.
Secretary. Philip K. Allen, 314 Medico-Dental Building, 233 A Street, San Diego.

Eye, Ear, Nose and Throat

Chairman, J. Roy Jones, 2138 Third Avenue, Sacramento.
Vice-Chairman, Harold A. Fletcher, 1440 Medico-Dental Building, 490 Post Street, San Francisco.
Secretary. Samuel A. Durr, 1304 Medico-Dental Building, 233 A Street, San Diego.

General Medicine

Chairman, Fred H. Kruse, 916 Fitzhugh Building, 384 Post Street, San Francisco.
Secretary, Hilmar O. Koefod, 1421 State Street, Santa Barbara.

General Surgery

Chairman, Joseph K. Swindt, 546 Investment Building, Pomona.
Secretary, Edwin M. Taylor, 230 Grand Avenue, Oakland.
Assistant Secretary, William P. Kroger, 902 Wilshire Medical Building, 1930 Wilshire Boulevard, Los Angeles.

Industrial Medicine and Surgery

Chairman, John J. Loutzenheiser, Union Square Building, 350 Post Street, San Francisco.
Secretary, J. Minton Meherin, 507 Union Square Building, 350 Post Street, San Francisco.

Neuropsychiatry

Chairman, Clifford W. Mack, Livermore Sanitarium, Livermore.
Vice-Chairman, Helen Hopkins, 925 Pacific Mutual Building, 523 W. Sixth Street, Los Angeles.
Secretary, H. Douglas Eaton, 811 Medical Office Building, 1136 West Sixth Street, Los Angeles.

Obstetrics and Gynecology

Chairman, Alice F. Maxwell, University of California Hospital, Fourth and Parnassus Avenues, San Francisco.
Vice-Chairman, Emil F. Krahulik, 1021 Taft Building, 1680 N. Vine Street, Hollywood.
Secretary, H. A. Stephenson, 521 Medico-Dental Building, 490 Post Street, San Francisco.

Pathology and Bacteriology

Chairman, George D. Maner, Wilshire Medical Building, 1930 Wilshire Boulevard, Los Angeles.
Secretary, Emil Bogen, Olive View Sanitarium, Olive View.
Assistant Secretary, Zera E. Bolin, 450 Sutter Street, San Francisco.

Pediatrics

Chairman, Francis S. Smyth, University of California Hospital, Fourth and Parnassus Avenues, San Francisco.
Secretary, Henry E. Stafford, 242 Moss Avenue, Oakland.
Assistant Secretary, Sam J. McClendon, 2001 Fourth Street, San Diego.

Radiology

Chairman, Robert S. Stone, University of California Hospital, Fourth and Parnassus Avenues, San Francisco.
Secretary, Kenneth S. Davis, St. Vincent's Hospital, 2131 Ocean View Boulevard, Los Angeles.

Urology

Chairman, Lewis Michelson, 434 Medico-Dental Building, 490 Post Street, San Francisco.
Secretary, George F. Schenck, 308 Wilshire Medical Building, 1930 Wilshire Boulevard, Los Angeles.

Officers of County Medical Associations

Alameda County Medical Association

2404 Broadway, Oakland

President, Dexter N. Richards, 400 29th St., Oakland.
Secretary, Gertrude Moore, 2404 Broadway, Oakland.

Butte County Medical Society

President, Dan H. Moulton, Box 520, Chico.
Secretary, J. O. Chiapella, Chiapella Building, Chico.

Contra Costa County Medical Society

President, L. H. Fraser, American Trust Bldg., Richmond.
Secretary, Clara H. Spalding, 331 Eighth Street, Richmond.

Fresno County Medical Society

President, Elmer J. Schmidt, 612 T. W. Patterson Building, Fresno.
Secretary, Neil J. Dau, 1111 Fulton St., Fresno.

Humboldt County Medical Society

President, Lane Falk, 507 F Street, Eureka.
Secretary, L. A. Wing, Eureka.

Imperial County Medical Society

President, John L. Parker, Brawley.
Secretary, George C. Holleran, Brawley.

Kern County Medical Society

President, Perryman F. Page, Box 426, Taft.
Secretary, Seymour Strongin, San Joaquin Hospital, Bakersfield.

Kings County Medical Society

President, C. G. Newbecker, Hanford.
Secretary, Benjamin H. Pratt, First National Bank Building, Lemoore.

Lassen-Plumas County Medical Society

President, Bert J. Lasswell, Quincy.
Secretary, C. I. Burnett, Knoch Building. Susanville.

Los Angeles County Medical Association

1925 Wilshire Boulevard

President, Charles T. Sturgeon, 1930 Wilshire Boulevard, Los Angeles.
Secretary, Harry H. Wilson, 1925 Wilshire Boulevard, Los Angeles.

Marin County Medical Society

President, John H. Kuser, Cheda Building, San Rafael.
Secretary, Carl W. Clark, Albert Building, San Rafael.

Mendocino County Medical Society

President, R. A. Babcock, Willits.
Secretary, Paul J. Bowman. Fort Bragg.

Merced County Medical Society

President, B. E. McDowell, Bank of Italy Building, Merced.
Secretary, Fred O. Lien, Shaffer Building, Merced

Monterey County Medical Society

President, R. M. Fortier, 2 McDougall Building, Salinas.
Secretary, John A. Merrill, 308 Spazier Building, Monterey.

Napa County Medical Society

President, C. A. Johnson, Gordon Building, Napa.
Secretary, M. M. Booth, 1379 Main Street, St. Helena.

Orange County Medical Society

President, William S. Wallace, 207 W. Chapman Street, Orange.
Secretary, Waldo S. Wehrly, 620 N. Main Street, Santa Ana.

Placer County Medical Society

President, L. B. Barnes, Newcastle.
Secretary, R. A. Peers, Colfax.

Riverside County Medical Society

President, Hervey S. Farris, 3616 Main Street, Riverside.
Secretary, T. A. Card, Glenwood Block, Riverside.

Sacramento Society for Medical Improvement

President, George A. Briggs, 409 Farmers and Mechanics Bank Bldg., Sacramento.
Secretary, Frank W. Lee, 510 Physicians Building, 1027 Tenth Street, Sacramento.

San Benito County Medical Society

President, L. C. Hull, Hollister.
Secretary, L. E. Smith. Hollister.

San Bernardino County Medical Society

President, Fred B. Moor, Loma Linda.
Secretary, E. J. Eytinge, 47 East Vine Street, Redlands.

San Diego County Medical Society

Fourteenth Floor, Medico-Dental Building.
233 A Street, San Diego

President, Clair L. Stealy, 2001 Fourth St., San Diego.
Secretary, William H. Geistweit, Jr., 810 Medico-Dental Building, 233 A Street, San Diego.

San Francisco County Medical Society

2180 Washington Street, San Francisco

President, Karl L. Schaupp, 530 Medico-Dental Bldg., 490 Post St., San Francisco.
Secretary, Mary Jones-Mentzer, 2180 Washington St., San Francisco.

San Joaquin County Medical Society

President, J. F. Doughty, 231 W. 11th St., Tracy.
Secretary, C. A. Broaddus, 907 Medico-Dental Building, 242 North Sutter Street, Stockton.

San Luis Obispo County Medical Society

President, W. D. Butler, 1114 Chorro Street, San Luis Obispo.
Secretary, Allen F. Gillihan, San Luis Obispo.

San Mateo County Medical Society

President, Benjamin H. Page, 231 Second Avenue, San Mateo.
Secretary, H. H. Ray, 23 Second Avenue, San Mateo.

(Roster lists continued on advertising page 6)

Santa Barbara County Medical Society

President, M. J. Geyman, 1520 Chapala Street, Santa Barbara.
Secretary, William H. Eaton, Health Department, Santa Barbara.

Santa Clara County Medical Society

President, George L. Barry, 700 Medico-Dental Building, San Jose.
Secretary. E. O. G. Schmitt, 608 Medico-Dental Building, San Jose.

Santa Cruz County Medical Society

President, O. C. Marshall, New Register Building, Watsonville.
Secretary, Samuel B. Randall, Farmers and Merchants Natl. Bank Bldg., Santa Cruz.

Shasta County Medical Society

President, Earnest Dozier, Masonic Building, Redding.
Secretary, F. H. Olberg. Craddock Building, Redding.

Siskiyou County Medical Society

President, W. E. Hart, Yreka.
Secretary, Joseph Langer, Hilt.

Solano County Medical Society

President, Philip B. Fry, Benicia.
Secretary, John W. Green, 427 Sacramento Street, Vallejo.

Sonoma County Medical Society

President, Mark L. Lewis, 41 Main Street, Petaluma.
Secretary, W. C. Shipley, 206 Rosenberg Building, Santa Rosa.

Stanislaus County Medical Society

President, Donald L. Robertson, 1003 12th Street, Modesto.
Secretary, J. A. Porter, 209 Beaty Bldg., 1024 J St., Modesto.

Tehama County Medical Society

President, F. L. Doane, Red Bluff.
Secretary, F. J. Bailey, Red Bluff.

Tulare County Medical Society

President, Frank Kohn, County Hospital, Tulare.
Secretary, Karl F. Weiss, Security First National Bank Building, Visalia.

Ventura County Medical Society

President, F. Royal Hendricks, 620 E. Main St., Ventura.
Secretary, Wm. Felberbaum, 134 N. 10th St., Santa Paula.

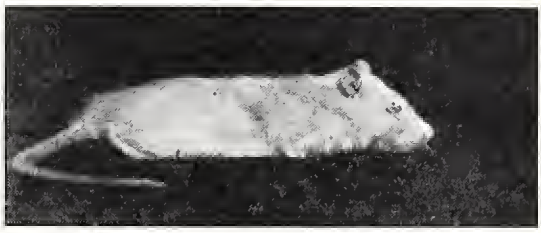
Yolo-Colusa-Glenn County Medical Society

President, Oscar C. Railsback, Woodland Clinic, Woodland.
Secretary, G. W. Desrosier, Colusa.

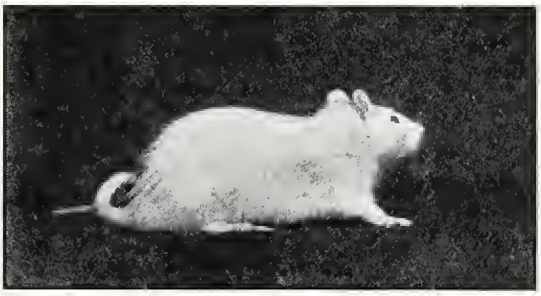
Yuba-Sutter County Medical Society

President, T. E. Larner, I. O. O. F. Building, Marysville.
Secretary, Fred W. Didier, Wheatland.

THE PHOTOGRAPHS TELL THE STORY



No. 1 (Laboratory No. 8318)
Received plain cod liver oil. Note xerophthalmic condition of eyes and poor muscular tone—almost too weak to stand. It lost 21 *grams during the* 35*-day test period.*



No. 2 (Laboratory No. 8312)
This rat received Maltine With Cod Liver Oil. *In contrast to No.* 1, *this animal exhibits bright, sparkling eyes—no signs of inflammation. It* gained 65 *grams during the* 35*-day test period.*

In order to determine the relative vitamin A value of plain cod liver oil and of Maltine With Cod Liver Oil, an extensive series of tests have been conducted in the Maltine laboratories which indicate that Maltine With Cod Liver Oil made a better showing than the plain cod liver oil.

The results of these tests substantiate the statement made by a nationally known authority in his report on Maltine With Cod Liver Oil*: "In tests for vitamin A, Maltine With Cod Liver Oil gave better results than were obtained with plain cod liver oil when the latter was fed in amounts equivalent to the cod liver oil present in Maltine With Cod Liver Oil dosages." In our own tests, rat No. 2 received 4.0 mgs. of Maltine With Cod Liver Oil daily, while rat No. 1 received 0.8948 mgs. of plain cod liver oil, which is the equivalent weight of the oil in 4.0 mgs. of Maltine With Cod Liver Oil. The same cod liver oil was used in both tests.

We are convinced that the excellent showing made by Maltine With Cod Liver Oil is due to the very fine emulsified form in which the cod liver oil exists in this product. It would appear that the oil, thus finely subdivided, and in this particular form, is more completely utilized by the animal body than when plain cod liver oil is fed.

Maltine With Cod Liver Oil is biologically standardized. Seventy per cent by volume, is Maltine, a concentrated extract of the nourishing elements of malted barley, wheat and oats, rich sources of vitamins B and G. Thirty per cent by volume, is pure, vitamin-tested cod liver oil, a rich source of vitamins A and D. Administered with orange or tomato juice vitamin C is added. Biological and vitamin report on request. The Maltine Company, Est. 1875, 30 Vesey Street, New York, N. Y.

---

* Name on request.

THE ORIGINAL

Maltine

WITH COD LIVER OIL

Introduced in 1875

Member NRA
We do our part

Certifoods—sieved vegetables of known and guaranteed vitamin potency. Prepared by an exclusive process which conserves maximum vitamin values, proteins, calories and mineral salts—particularly iron and phosphorus. Prepared by Certifoods, Inc., subsidiary of The Maltine Company.

Woman's Auxiliary to the California Medical Association

State Auxiliary Officers

President, Mrs. Andrew Mitchell Henderson, 1600 M Street, Sacramento.

President-Elect, Mrs. Philip Schuyler Doane, 855 Oak Knoll Circle, Pasadena.

First Vice-President, Mrs. Paul A. Quaintance, 809 South Orange Drive, Los Angeles.

Second Vice-President, Mrs. Thomas Clark, 40 Ross Circle, Oakland.

Recording Secretary, Mrs. Ruggles A. Cushman, Talmage.

Corresponding Secretary, Mrs. Charles E. Von Geldern, 1325 Fortieth Street, Sacramento.

Treasurer, Mrs. F. N. Scatena, 1400 Forty-first Street, Sacramento.

Officers of County Auxiliaries

Alameda County — President, Mrs. Charles Dukes, 211 The Uplands, Oakland.

Contra Costa County—President, Mrs. U. S. Abbott, 5490 Barrett Avenue, Richmond.

Los Angeles County — President, Mrs. A. Bennett Cooke, Pasadena.

Mendocino County—Mrs. R. A. Cushman, Talmage.

Napa County—President, Mrs. W. L. Blodget, Calistoga.

Orange County—Mrs. C. S. O'Toole, Anaheim.

Riverside County — Mrs. A. W. Walker, Riverside.

Sacramento County—President, Mrs. Frederick N. Scatena, Sacramento.

San Bernardino County—President, Mrs. C. G. Hilliard, Redlands.

San Diego County—President, Mrs. Charles E. Howard, San Diego.

San Joaquin County—President, Mrs. P. B. Gallegos, Stockton.

Santa Barbara County—President, Mrs. R.T. Atsatt, Santa Barbara.

San Luis Obispo County—Mrs. Deon A. Crew, 846 Higuera Street, San Luis Obispo.

Sonoma County—President, Mrs. Henry S. Rogers, Petaluma.

Delegates and Alternates to the American Medical Association

DELEGATES		ALTERNATES
C. A. Dukes, Oakland	(1934)	Edward N. Ewer, Oakland
Carl R. Howson, Los Angeles	(1934)	Edward M. Pallette, Los Angeles
Junius B. Harris, Sacramento	(1934)	John Hunt Shepard, San Jose
William R. Molony, Sr., Los Angeles	(1934)	John C. Ruddock, Los Angeles
Elhridge Best, San Francisco	(1934-1935)	Robert S. Stone, San Francisco
Lyell C. Kinney, San Diego	(1934-1935)	Harry H. Wilson, Los Angeles
Fred B. Clarke, Long Beach	(1934-1935)	A. J. Scott, Los Angeles

Miscellaneous California Medical Organizations

California State Department of Public Health

San Francisco—State Office Building, McAllister and Larkin Streets. UNderhill 8700.

Sacramento—State Office Building, Tenth and L Streets. CApital 2800.

Los Angeles — State Office Building, 217 West First Street. MAdison 1281.

President, John H. Graves, San Francisco.

Director, Giles S. Porter, Los Angeles.

Board of Medical Examiners of the State of California

San Francisco, Rm. 512, 450 McAllister St.

Los Angeles, 812 Associated Realty Building 510 West Sixth Street

Sacramento, 420 State Office Building

President, P. T. Phillips, Santa Cruz.

Secretary, C .B. Pinkham, Room 512, 450 McAllister Street, San Francisco.

Southern California Medical Association

President, Bon O. Adams, Riverside.

Secretary, Robert W. Langley, 1002 Wilshire Medical Building, 1930 Wilshire Boulevard, Los Angeles.

California Northern District Medical Society

President, D. Schuyler Pulford, California State Life Building, Sacramento.

Secretary, Edward S. Babcock, 820 Medico-Dental Building, 1127 Eleventh Street, Sacramento.

Pacific Roentgen Club

Chairman, Lowell S. Goin, 1930 Wilshire Boulevard, Los Angeles.

Secretary, L. H. Garland, 450 Sutter Street, San Francisco.

Better Health Foundation

President, Reginald Knight Smith, 490 Post Street, San Francisco.

Chairman, Executive Committee, Walter B. Coffey, 65 Market Street, San Francisco.

Treasurer, John Gallwey, 1195 Bush Street, San Francisco.

Secretary, Celestine J. Sullivan, 490 Post Street, San Francisco.

Nevada State Medical Association

O. HOVENDEN, McGill	President
D. A. SMITH, Mina	President-elect
J. N. VAN METER, Las Vegas	First Vice-President
FLEET H. HARRISON, Minden	Second Vice-President
HORACE J. BROWN, Reno	Secretary-Treasurer
HORACE J. BROWN, Reno	Delegate
E. E. HAMER, Carson City	Alternate

Hospitals and Sanatoriums

The Institutions here listed have announcements in this issue of CALIFORNIA AND WESTERN MEDICINE. For Index, see advertising page 8.

CALIFORNIA SANITARIUM
For Treatment of Tuberculosis
Belmont, California

CANYON SANATORIUM
For the Treatment of Tuberculosis
Redwood City, California

COLFAX SCHOOL FOR THE TUBERCULOUS
For the Treatment of Tuberculosis
Colfax, California

COMPTON SANATORIUM AND LAS CAMPANAS HOSPITAL, COMPTON
Neuropsychiatric and General

DANTE SANATORIUM
Limited General Hospital
Van Ness and Broadway, San Francisco

FRANKLIN HOSPITAL
Limited General Hospital
Fourteenth and Noe Streets, San Francisco

FRENCH HOSPITAL
General Hospital
Geary at Fifth Avenue, San Francisco

GREENS' EYE HOSPITAL
Consultation, Diagnosis and Treatment of Diseases of the Eye
Bush and Octavia Streets, San Francisco

THE GREER HOME, Inc.
Convalescent Home
6000 Fulton Street, San Francisco

LAS ENCINAS SANITARIUM
Nervous and General Diseases
Las Encinas, Pasadena, California

LIVERMORE SANITARIUM
Nervous and General Diseases
Livermore, California

OAKS SANITARIUM
For Treatment of Tuberculosis
Los Gatos, California

POTTENGER SANATORIUM AND CLINIC
For the Treatment of Tuberculosis
Monrovia, California

PARK SANITARIUM
Mental and Nervous, Alcoholic and Drug Addictions
1500 Page Street, San Francisco, California

SAINT FRANCIS HOSPITAL
Limited General Hospital
Bush and Hyde Streets, San Francisco

ST. LUKE'S HOSPITAL
Limited General Hospital
27th and Valencia Streets, San Francisco

ST. MARY'S HOSPITAL
General Hospital
2200 Hayes Street, San Francisco

SOUTHERN SIERRAS SANATORIUM
Scientific Treatment of Tuberculosis
Banning, California

TWIN PINES
Internal Medicine and Neuropsychiatric Cases
Belmont, California

STUART MEDICAL GASES

Announcing the NEW

Hi-Pure
Nitrous Oxide

99.5% PURE

OUR laboratory research extending over a three year period has resulted in a new method of reprocessing nitrous oxide, attaining a purity in excess of 99.5%. This is accomplished by removing the free nitrogen often present up to 5%.

It is believed this will permit using higher percentages of oxygen in nitrous oxide-oxygen anaesthesia.

We are now prepared to furnish this reprocessed 99.5% pure nitrous oxide at a price only slightly higher than that prevailing on our standard product which conforms in all particulars to U.S.P. standards.

We invite inquiries and comments.

We will be glad to show you how to test your Nitrous Oxide for its free nitrogen content

STUART OXYGEN CO.

2857 Ettie Street
OAKLAND
HIgate 0345

211 Bay Street
SAN FRANCISCO
DOuglas 5138

723 East Ninth Street
LOS ANGELES
VAndyke 8484

ALPHABETICAL LIST OF ADVERTISERS

Members of the California Medical Association can aid their Journal and the firms who advertise therein, by coöperation as indicated in the footnote on this page

PAGE

Approved Clinical Laboratories 12
Alexander Sanitarium 37

Barry Co., The James H. 3 Cover
Bio-Vegetin Products, Inc. 23
Borden Co., The 19
Broemmel's Prescription Pharmacies 3
Bush Electric Corporation 1

California Lima Bean Growers' Association 26
California Sanatorium, The 26
Calso Water Co. 30
Canyon Sanitarium 35
Certified Laboratory Products 37
Chesterfield Cigarettes 27
Chicago Eye, Ear, Nose and Throat Hospital 9
Classified Advertisements 10
Cocomalt 31
Colfax School for the Tuberculous 40
Compton Sanitarium and Las Campanas Hospital 24
Cutter Laboratory 4 Cover

Dante Sanatorium 14
Davis Co., R. B. 31
Dewar & Hare Electric Co. 3
Diederich Optical Co., Inc. 28
Doctors' Business Bureau 34
Dry Milk Co., The 15

Four-Fifty Sutter 30
Franklin Hospital 22
French Hospital 28

Golden State Co., Ltd. 39
Greens' Eye Hospital 2 Cover
Greer Home 9
Guth, C. Rodolph, Clinical Laboratories 10

Hittenberger 11
Hospitals and Sanatoriums 6
Hynson, Westcott & Dunning, Inc. 38

La Loma Feliz 9
Las Encinas Sanitarium 3
Lilly & Company, Eli 32
Livermore Sanitarium 4 Cover

Maltine Company, The 5
Mead Johnson & Co. 20
Medical Protective Co., The 29
Merck & Co., Inc. 24
Mulford Biological Laboratories 13

New York Polyclinic Medical School and Hospital 9

Oaks Sanitarium, The 25
Officers of the California Medical Association 2-4
Officers of Miscellaneous Medical Associations 6

Parke, Davis & Co. 16
Park Sanitarium 38
Postgraduate Instruction 9
Pottenger Sanatorium 17

Ray, Frederick, Collection Specialist 22
Riggs Optical Company 36

Saint Francis Hospital 9
San Francisco Bank, The 36
Sharp & Dohme 13
Shumate's Prescription Pharmacies 3
Soiland, Albert (Radiological Clinic) 39
Southern Sierras Sanatorium 18
Sperry Flour Co., The 33
Stacey, J. W., Medical Books 11
Stuart Oxygen Co. 7
St. Luke's Hospital 38
St. Mary's Hospital 21

Tulane University of Louisiana Graduate School of Medicine 9
Twin Pines 11

Walters Surgical Company 11
Wilson Laboratories, The 31

ON CO-OPERATION WITH ADVERTISERS

California and Western Medicine, the Journal of our Association, in its present form, is made possible in part because of the generous coöperation of firms who believe that its pages can successfully carry a message concerning their products to a desirable group of present and future patrons.

The five thousand and more readers of California and Western Medicine often have occasion to purchase articles advertised in this publication.

Other things being equal, it would seem that reciprocal courtesy and coöperation should lead our members to give preference to those firms who place announcements in our publication.

Coöperation might go even farther than that. When ordering goods from our advertisers, mention California and Western Medicine. By the observance of this rule, a distinct service will be given your Association, its Journal and our advertisers.

A SERVICE AGENCY—FOR READERS

The Journal of the American Medical Association and the A. M. A. Coöperative Medical Advertising Bureau of Chicago maintain a Service Department to answer inquiries from you about pharmaceuticals, surgical instruments and other manufactured products, such as soaps, clothing, automobiles, etc., which you may need in your home, office, sanitarium or hospital.

We invite and urge you to use this Service. It is absolutely *free* to every member of the California and Nevada Associations. The Coöperative Bureau is equipped with catalogues and price lists of manufacturers, and can supply you information by return mail.

Perhaps you want a certain kind of instrument which is not advertised in California and Western Medicine, and do not know where to secure it; or do not know where to obtain some automobile supplies you need. This A. M. A. Service Bureau will give you the information. Whenever possible, the goods will be advertised in our pages; but if they are not, we urge you to write direct to the Coöperative Medical Advertising Bureau, 535 N. Dearborn Street, Chicago, Illinois. California and Western Medicine and the A. M. A. Service Bureau desire to serve *you*.

The New York Polyclinic

MEDICAL SCHOOL AND HOSPITAL

(Organized 1881)

(The Pioneer Post-Graduate Medical Institution in America)

We announce

FOR THE GENERAL SURGEON

a combined surgical course comprising

General Surgery, Traumatic Surgery, Abdominal Surgery, Gastro-Enterology, Proctology, Gynecological Surgery, Urological Surgery, Neuro-Surgery, Thoracic Surgery, Pathology, Roentgenology, Physical Therapy, Operative Surgery and Operative Gynecology on the Cadavar.

For information address MEDICAL EXECUTIVE OFFICER: 345 W. 50th St., New York City

---

SAINT FRANCIS HOSPITAL

AND

SCHOOL OF NURSING

A General Hospital With Accommodations for Three Hundred Patients

DIRECTORS

JOHN GALLWEY, M. D.
W. B. COFFEY, M. D.
THOS. E. SHUMATE, M. D.
C. R. BRICCA, M. D.

W. W. WYMORE, M. D.
JOHN H. GRAVES, M. D.
Superintendent, V. W. OLNEY

J. H. O'CONNOR, M. D.
R. K. SMITH, M. D.
H. E. MANWARING
W. H. LINFORTH

Address Communications

SAINT FRANCIS HOSPITAL

Bush and Hyde Streets *Telephone* **PROSPECT 7600** **San Francisco**

La Loma Feliz

(HAPPY HILLSIDE)

Residential School for children handicapped by heart disease, asthma and kindred conditions.

Offers consistent medical attention and regular schooling. No tuberculous or mentally retarded children. Situated on a ranch in the foothills near Santa Barbara. Dry equable climate by actual weather bureau observations.

P. O. Box 585
Telephone No. 22349

INA M. RICHTER, M. D.
Director

Mission Canyon Road
Santa Barbara, California

POSTGRADUATE COURSE

For Graduates in Medicine
Eye, Ear, Nose and Throat
A house doctor is appointed July 1st and Jan. 1st

LABORATORY COURSE

For Nurses and Graduates of High School
CLASSES LIMITED TO SIX
X-Ray, Basal Metabolism, Electro-cardiography and Physical Therapy

150 clinical patients daily provide material for classes. Positions with attractive salaries in hospitals and with group doctors await qualified Technicians

For particulars regarding either course write

CHICAGO EYE, EAR, NOSE AND THROAT HOSPITAL, 231 West Washington Street, Chicago, Illinois

---

The Tulane University of Louisiana

Graduate School of Medicine

Approved by the Council on Medical Education of the A. M. A.

POSTGRADUATE instruction offered in all branches of medicine. Courses leading to a higher degree have also been instituted.

For bulletin furnishing detailed information, apply to the . . . .

DEAN

Graduate School of Medicine

1430 Tulane Avenue New Orleans, La.

The GREER HOME, *specializing in*

RECUPERATIVE AND NERVOUS CASES

AN INSTITUTION OF 25 BEDS

Our staff includes a resident physician and competent corps of registered nurses.

Attractive location and recreational surroundings with absence of hospital atmosphere. Inspection invited. Only referred cases of qualified physicians accepted.

The GREER HOME, Inc.

Corner 36th Avenue and Fulton Street
SAN FRANCISCO, CALIFORNIA
Telephone EVERGREEN 9645

CLASSIFIED ADVERTISEMENTS

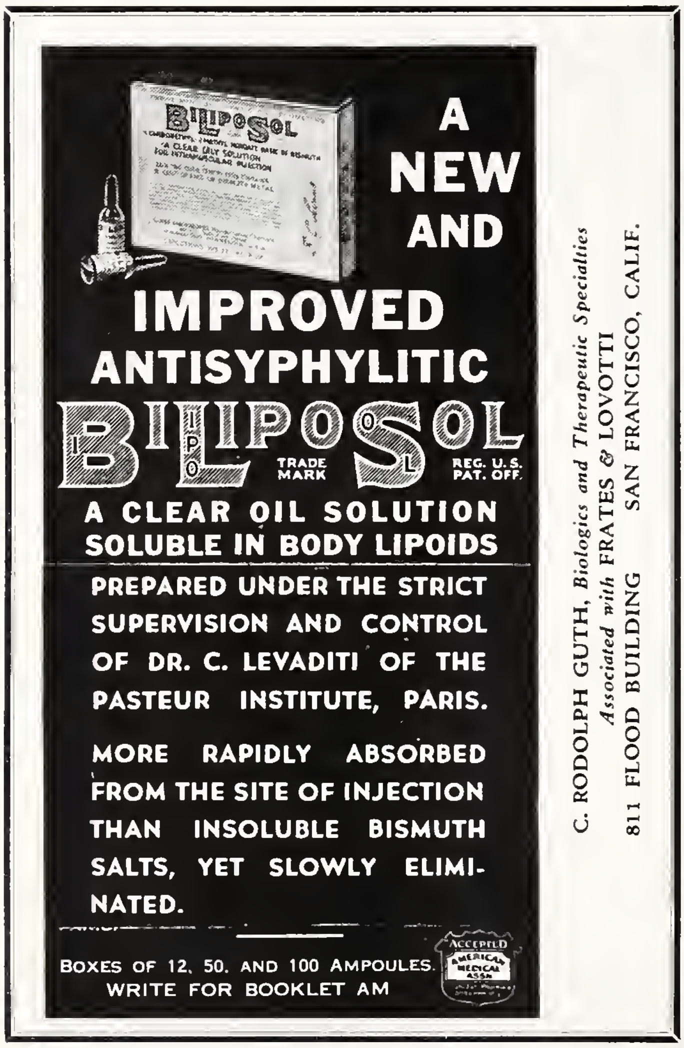
Rates for these insertions are $4 for fifty words or less; additional words 5 cents each.

COACHING FOR STATE BOARDS—MEDICAL AND dental. Arthur H. White, M. D., Suite 1005, Flood Building, San Francisco.

CONVALESCENT CARE — PRIVATE HOME IN SANTA Cruz mountains, owned by licensed doctor of medicine. Rooms for two aged or invalid persons. Address Box 1000, California and Western Medicine.

DESIRE TO PURCHASE GENERAL PRACTICE IN TOWN of 3000 or more in Southern California, or other town with mild climate. Prefer town with hospital facilities and a practice with some or considerable surgery. State terms and full details. Address, Box 1010, California and Western Medicine.

WIDELY EXPERIENCED LABORATORY TECHNICIAN seeks position as laboratory director or associate. Will consider minor position. Eight years of experience in clinical laboratory diagnosis, including all chemical and bacteriological examinations. Blood chemistry. Serology. Parasitology. Vaccine therapy. Bacteriophage. Research. M. S. degree. Postgraduate study in three state institutions. Published research. References. Address, Box 1020, California and Western Medicine.


A NEW AND IMPROVED ANTISYPHYLITIC

BILIPOSOL TRADE MARK REG. U.S. PAT. OFF.

A CLEAR OIL SOLUTION SOLUBLE IN BODY LIPOIDS

PREPARED UNDER THE STRICT SUPERVISION AND CONTROL OF DR. C. LEVADITI OF THE PASTEUR INSTITUTE, PARIS.

MORE RAPIDLY ABSORBED FROM THE SITE OF INJECTION THAN INSOLUBLE BISMUTH SALTS, YET SLOWLY ELIMINATED.

BOXES OF 12, 50, AND 100 AMPOULES.
WRITE FOR BOOKLET AM

ACCEPTED AMERICAN MEDICAL ASSN

C. RODOLPH GUTH, *Biologics and Therapeutic Specialties*
Associated with FRATES & LOVOTTI
811 FLOOD BUILDING SAN FRANCISCO, CALIF.

Fewer Mosquitoes—More and Better Milk: An Alameda County Tribute.—An article by Robert B. Van Etten in the Alameda *Times-Star* states: "You are drinking a higher quality of milk because the Alameda County Mosquito Abatement District has greatly reduced the number of mosquitoes in Alameda County. Dairymen throughout the country report that their cows are giving more milk and that the milk contains a higher percentage of butterfat. The cows are now devoting all their attention to munching grass, instead of wasting energy swishing their tails at irritating, biting mosquitoes."

While malaria is not a problem in Alameda County, for the reason that the anopheles mosquito is seldom found in that county, it is stated that many residents are so constituted that mosquito bites produce illness in them. Children, particularly, may become infected by scratching mosquito bites. The article states that at one of the country clubs, before the mosquito abatement district had begun operations, it was necessary to station a man at the first tee with a large drum of oil of citronella and a spray gun. Everyone who played the course was sprayed on the face, arms and legs with the repellent. In addition, masks of mosquito netting were provided for all women players. Today, however, not a mosquito is to be found in that vicinity. Marksmen at the state rifle range complained, formerly, that it was impossible to aim their rifles properly because a mosquito would invariably sit on the gun sights, which was decidedly distracting. It is said, also, that tennis may now be played at night, which heretofore was impossible because of the hordes of mosquitoes that prevailed.

Twenty-nine hundred acres of marsh which have not yet been drained will be drained as soon as sufficient funds become available. At the present time this acreage is controlled by means of oiling—a more expensive procedure, over a period of years, than is drainage. The existing drainage ditches and sloughs must also be kept from filling up with silt; they must be cleared regularly of weeds and grass which otherwise would afford sufficient protection that mosquitoes might breed even in the drainage ditches.

The Alameda County abatement district covers a total area of approximately 320 square miles and is the largest mosquito abatement district in the state. It includes most of Alameda County. Harold F. Gray is the engineer of the district and Professor W. B. Herms of the University of California is a trustee. These two men conducted the operations of the first antimalaria mosquito abatement work that was done in California. This was accomplished in Placer County in 1910.—*Weekly Bulletin, California Department of Public Health.*

Ticks as Vendors of Disease.—Various types of ticks are responsible for the transmission of many severe and highly fatal diseases. It is probable that, during the present summer season, more individuals have been exposed to ticks than is usual at this time of year. Large numbers of camping parties are seen in the mountain forests this season and thousands of young men are employed in the Civilian Conservation Corps camps. It is doubtful that any other insect at the present time disseminates more serious and disastrous diseases than does the tick. Among such diseases are relapsing fever, Rocky Mountain spotted fever, tularemia, and other less well known but equally disastrous diseases.

Individuals who visit the recreational areas of the state should exercise every precaution against invasion by ticks. An article in a recent issue of the *Weekly Bulletin* gave specific instructions relative to the best methods that might be employed in preventing such invasions.—*Weekly Bulletin, California Department of Public Health.*

BOOK REVIEWS

List of Books Received

BOOKS RECEIVED

Fetal, Newborn, and Maternal Morbidity and Mortality. Report of the Subcommittee on Factors and Causes of Fetal, Newborn, and Maternal Morbidity and Mortality, Hugo Ehrenfest, M. D., Chairman, White House Conference on Child Health and Protection. Cloth. Pp. 486. Price, $3. New York and London: D. Appleton-Century Company, 1933.

The History and Epidemiology of Syphilis. The Gehrmann Lectures, University of Illinois, 1933. By William Allen Pusey, A. M., M. D., LL. D., Emeritus Professor of Dermatology, University of Illinois, sometime President of the American Dermatological Association and of the American Medical Association. Cloth. Pp. 113, illustrated. Price, $2. Springfield, Illinois: Charles C. Thomas, 1933.

Public Health Nursing in Industry. Prepared for the National Organization for Public Health Nursing by Violet H. Hodgson, R. N., Assistant Director, National Organization for Public Health Nursing. Cloth. Pp. 249. Price, $1.75. New York: The Macmillan Company, 1933.

The Technic of Local Anesthesia. By Arthur E. Hertzler, A. M., M. D., Ph. D., LL. D., F. A. C. S., Professor of Surgery in the University of Kansas; Surgeon to the Halstead Hospital, Halstead, Kansas; to St. Luke's Hospital and St. Mary's Hospital, Kansas City, Missouri; and to the Providence Hospital, Kansas City, Kansas. Fifth Edition. Cloth. Pp. 292, with 148 illustrations. St. Louis: The C. V. Mosby Company, 1933.

Surgery of the Stomach and Duodenum. By J. Shelton Horsley, M. D., F. A. C. S., LL. D., Attending Surgeon, St. Elizabeth's Hospital, Richmond, Virginia. Cloth. Pp. 260, with 136 illustrations. Illustrated by Miss Helen Lorraine. Price, $7.50. St. Louis: The C. V. Mosby Company, 1933.

International Clinics. A quarterly of illustrated clinical lectures and especially prepared original articles on Treatment, Medicine, Surgery, Neurology, Pediatrics, Obstetrics, Gynecology, Orthopedics, Pathology, Dermatology, Ophthalmology, Otology, Rhinology, Laryngology, Hygiene, and other topics of interest. By leading members of the medical profession throughout the world. Edited by Louis Hamman, M. D., Visiting Physician, Johns Hopkins Hospital, Baltimore, Maryland. Volume III. Forty-Third Series, 1933. Cloth. Pp. 316. Philadelphia: J. B. Lippincott Company, 1933.

The Diseases of Infants and Children. By J. P. Crozer Griffith, M. D., Ph. D., Emeritus Professor of Pediatrics in the University of Pennsylvania; Consulting Physician to the Children's Hospital, and St. Christopher's Hospital for Children; Consulting Pediatrist to the Woman's, the

(Continued on Next Page)

- - - New BOOKS

Findley: The Story of Childbirth $3.50
Gordon & Brown: Paralysis in Children . . 4.50
Nuzum: The Span of Life 2.00
Pusey: The History and Epidemiology of Syphilis 2.00
Stedman: Medical Dictionary (new 12th ed.) 7.50

Books gladly sent on approval

J. W. STACEY, INC.
Medical and Scientific Books
GArfield 0838
236-238 Flood Bldg. San Francisco

Code CHH Prices

and our Policy—

We are in full sympathy with the President's plan to restore prosperity, and feel certain that concerted coöperation with the N R A will benefit all of us.

We assure you, doctor, that this same spirit of coöperation is extended to you; that, even in the face of increased cost of material and operation, WE shall endeavor to hold the prices of Surgical Appliances down to the minimum.

DESIGNERS, BUILDERS, FITTERS OF SURGICAL, ORTHOPEDIC AND PROSTHETIC APPLIANCES

Phone MArket 4244

HITTENBERGER

Quality and Service since 1912

1115 MARKET ST. 460 POST ST.
SAN FRANCISCO

WALTERS SURGICAL COMPANY
- SERVICE -
521 SUTTER STREET : SAN FRANCISCO : *Telephone* GARFIELD 7995
PHYSICIANS' · SURGEONS' · HOSPITAL · SUPPLIES
MAIL AND TELEPHONE ORDERS GIVEN PROMPT AND CAREFUL ATTENTION

TWIN PINES SANITARIUM
BELMONT, CALIFORNIA
INTERNAL MEDICINE AND SELECTED NEUROPSYCHIATRIC CASES
CLARE MEHRTENS, *Director* WILL REBEC, M. D., *Medical Director*
Number of Patients Limited
Accredited to AMERICAN MEDICAL ASSOCIATION
Telephone BELMONT 111

APPROVED CLINICAL PATHOLOGISTS

American Medical Association Essentials for An Approved Clinical Pathologist

An approved clinical pathologist should be a licensed graduate of medicine. He shall have specialized in clinical pathology, bacteriology, pathology, chemistry, and other allied subjects for at least three years, and he should be reasonably familiar with the manifestations of disease in the body. The director of a clinical laboratory shall be on full time or have definite hours of attendance, devoting the major part of his time to this specialty. A clinical laboratory is an institution organized for the practical application of the fundamental sciences by the use of specialized apparatus, equipment and methods, for the purpose of ascertaining the presence, nature, source, and progress of disease in the human body.

The following Clinical Pathologists directing private laboratories in California are approved by the Council on Medical Education and Hospitals of the American Medical Association:

Clinical Laboratory of Drs. W. V. Brem, A. H. Zeiler, Roy W. Hammack and G. D. Maner, 657 So. Westlake Avenue, Los Angeles, California.

Zera E. Bolin, M. D., 450 Sutter Street, San Francisco, California.

These laboratories use standard methods and are fully equipped to make all clinical examinations of recognized value in: **Tissue Pathology, Bacteriology, Hematology, Serology, Bio-Chemistry, Kolmer Wassermanns, Kahn test, Medico-legal, Basal metabolism, Blood chemistry, Hormone Test for Pregnancy, Parasitology, Cardiology, Autogenous vaccines, etc.**

Mailing containers sent on request. Special delivery postage insures prompt, accurate service.

BOOKS RECEIVED

(Continued from Preceding Page)

Jewish, and the Misericordia Hospital, Philadelphia, and A. Graeme Mitchell, M. D., B. K. Rachford Professor of Pediatrics College of Medicine, University of Cincinnati; Medical Director and Chief of the Staff of the Children's Hospital Research Foundation; Director of Pediatric and Contagious Services, Cincinnati General Hospital. Cloth. Pp. 1155, with 281 illustrations. Price, $10 net. Philadelphia and London: W. B. Saunders Company, 1933.

A Textbook of Physiology. By William H. Howell, Ph. D., M. D., Sc. D., LL. D., Emeritus Professor of Physiology in the Johns Hopkins University, Baltimore, Maryland. Twelfth Edition, Thoroughly Revised. Cloth. Pp. 1132, with 308 illustrations. Price, $7 net. Philadelphia and London: W. B. Saunders Company, 1933.

Mayo Foundation Lectures on the History of Medicine. A series of lectures at the Mayo Foundation and at the Universities of Minnesota, Wisconsin, Iowa, Northwestern, and the Des Moines Academy of Medicine. Given between 1926 and 1932. Cloth. Pp. 516, with 26 illustrations. Price, $5 net. Philadelphia and London; W. B. Saunders Company, 1933.

Report to the United States Government on Tuberculosis with Some Therapeutic and Prophylactic Suggestions. By S. Adolphus Knopf, M. D. Revised and Enlarged Report Submitted to the State Department, War Veterans' Bureau as Government Delegate to the International Union Against Tuberculosis Held at the Hague, September 6-9, 1932. Cloth. Pp. 59, illustrated. Price, $1.15. New York: The National Tuberculosis Association, 1933.

Children, Inc. The Postwar "Administration" of the whole child life of one Baltic state in its critical period. A Factual Narrative. By Thomas J. Orbison (then Captain Medical Corps, U. S. A.), Chief of Latvian Section, American Relief Administration Child Fund. Cloth. Pp. 294. Price, $2. Boston: The Stratford Company, 1933.

BOOK REVIEWS

Fungous Diseases—A Clinico-Mycological Text. By Harry P. Jacobson. Pp. 317. Illustrated. Springfield: Charles C. Thomas. 1932.

It seems quite appropriate that this the first systematic American textbook on fungous diseases should be identified with the West. For it is well known not only that the general literature of the subject owes much to the medical profession of California, but also that one of the most dreaded of the mycotic infections, coccidioidal granuloma, was described first by Rixford. The contents of the book are presented under the three following main divisions: A. Dermatomycoses—(1) Saprophytic, (2) Parasitic; B. (1) Moniliasis, (2) Maduromycosis: Mycetoma, (3) Sporotrichosis, (4) Blastomycosis, (5) Actinomycosis, and (6) Coccidioides: California Disease: Coccidioidal Granuloma; C. (1) Torulosis, (2) Aspergillosis.

Conservative, well-organized and profusely illustrated, besides being an unusually fine piece of typographical work, this is a useful book and should meet with a cordial reception, particularly on the Pacific Coast, where coccidioidal granuloma is endemic.

Neuropathology, the Anatomical Foundation of Nervous Diseases. By Walter Freeman. Pp. 349. Illustrated. Philadelphia and London: W. B. Saunders Company. 1933. Price, $4.

This book presents a brief and satisfactory account of the main facts about neuropathology as viewed in the light of recent discoveries—especially those of Cajal and those of Hortega. As regards the arrangement of the material, a systematic plan of exposition is adhered to throughout the book, the text starting with descriptions of primitive connective-tissue cell types and concluding with a classification of the gliomata adapted from that of Bailey and Cushing. Reference can be made here only to one or two points of salient interest.

In Chapter One will be found an exhaustive study of the whole subject of cerebrospinal cytology, especial attention being paid to the derivation and distinguishing characteristics of the three glia cell types known, respectively, as macroglia, oligodendroglia, and microglia. It is pointed out that the first two types of cells are ectodermic in origin, while the microglia are derived, seemingly, from the mesoderm. The author estimates that "about 30 per cent of the cerebral gliomas are composed of macroglia. These tumors are designated 'astro-

(Continued on Page 14)

Urine actually becomes GERMICIDAL

Solution for children

Capsules for adults

CAPROKOL (Hexylresorcinol, S & D) is taken by mouth and excreted by the kidneys appearing largely as a conjugate, but in sufficient concentration in the free state to impart active bactericidal properties to the urine.

Hence, its activity in the treatment of urinary infections.

CAPROKOL

(Hexylresorcinol. S & D)

Sharp & Dohme

PHARMACEUTICALS
BIOLOGICALS

ACCEPTED AMERICAN MEDICAL ASSN. Council on Pharmacy and Chemistry

PHILADELPHIA
BALTIMORE
MONTREAL

DANTE SANATORIUM
Known for the High Standard of Cuisine and Service
Broadway and Van Ness Avenue
SAN FRANCISCO CALIFORNIA
Edward A. Trenkle, *Managing Director* *Telephone* GRaystone 1200

BOOK REVIEWS

(Continued from Page 12)

blastomas and astrocytomas.' " Remarkable properties are ascribed to the microglia. For example, under pathologic conditions they are said to "exhibit progressive metamorphoses of various types." But by far the most important function of the microglia would appear to be that of acting as migratory phagocytes. In Chapter Four, interesting ideas are advanced about the encephalitides of unknown etiology—those characterized by demyelination of nerve fibers.

Surgical Pathology. By William Boyd. Third edition. Illustrated. Pp. 866. Philadelphia and London: W. B. Saunders Company. 1933. Price, $10.

The present, third, edition has been thoroughly revised, many subjects having been virtually rewritten and much new matter added. This volume is intended to be a reference handbook for the surgeon, but its scope is broad enough to interest any practitioner of medicine. Each subject is sufficiently complete to make the text of value to medical students, it being noteworthy in this connection that "the clinical features of most of the conditions have been summarized so that the relation of the pathology to the symptomatology could be demonstrated."

The book is written in a clear, concise style, and many excellent bits of description contribute to make the text easily readable. Adequate illustrations are provided; and they are uniformly good as regards both the gross and the microscopic materials presented. They are practical illustrations, not merely beautifully colored pictures.

C. S.

Wheat, Egg or Milk-Free Diets, with Recipes and Food Lists. By Ray M. Balyeat. Assisted by Elmer M. Rusten and Ralph Bowen. Pp. 149. Illustrated. Philadelphia: J. B. Lippincott Company. 1933. Price, $2.50.

Wheat, egg or milk-free diets by Ray M. Balyeat is a timely book which will be found equally useful both to the patient and the physician.

The title is hardly an adequate interpretation of the contents of this volume, since the patient, at least, might not correlate the title with the main contents of the book. The first chapter is devoted to a brief but adequate interpretation of the various terms used to express the many types of food sensitization, such as asthma, hay fever, migraine, urticaria, eczema, gastro-intestinal symptoms, episcleritis, pruritus, arthritis, bladder irritation, vertigo, and certain types of epilepsy. An example is his explanation of the allergic patient. He states: "It appears that certain people are born with the ability to become specifically sensitive to pollen, animal emanations, dusts of various parts, or food, and have symptoms upon adequate contact." These people frequently transmit to their children the ability to become sensitive. However, the specific sensitivity is not inherited. The type of sensitization the antecedent suffered from has no relation to the type the descendant may have. For example a father may have hay fever due to pollen, his son eczema due to a sensitivity to egg, and the son's daughter asthma due to sensitization to orris root (a common ingredient in highly scented cosmetics). In other words, only the ability to become sensitive is transmitted. Hypersensitive individuals are spoken of as "allergic."

He deals briefly, in the second chapter, with the methods most commonly used in testing for food sensitization.

The remaining four chapters are devoted almost entirely to recipes containing no wheat, eggs, or milk, since, as the author points out, these three articles of food are probably more difficult to eliminate from the diet of the average American than any other combination of foods.

Physicians will find the chapters on recipes extremely useful in prescribing diets for their allergic patients. The allergic patient will gain an intelligent and comprehensive insight into his condition by reading the first two chapters.

R. A. R.

TWENTY-FIVE YEARS AGO

(Continued from Text Page 288)

The essentials of medical instruction are well-equipped laboratories and hospitals, competent teachers, a standard of admittance which shall exclude the ignorant and those incapable of scientific conceptions, and a high standard of graduation which shall exclude unworthy men from the professional degree. . . .

From an article on "The Ophthalmo-Tuberculin Reaction" by Edward F. Glaser, M. D., San Francisco.

This is a brief report on the limited observation of in all thirty-nine cases, some from the Fruit and

(Continued on Page 17)

"Irradiated or activated milk possesses a distinct advantage over all other measures of prophylaxis against rickets. It furnishes an automatic means of treatment, one which does not depend upon the co-operation of the mother..." *

Dr. Alfred F. Hess in the City of New York Department of Health Quarterly Bulletin, Vol. 1, No. 2, 1933 which states editorially, "So many inquiries have come to the Department of Health regarding irradiated milk that we have asked Dr. Alfred F. Hess to prepare the following brief article on the subject for our readers."

ANY BABY TAKING ITS DAILY RATION OF DRYCO IS THEREBY *PROTECTED AGAINST RICKETS!*

**For your convenience Dr. Hess' answer is here given almost in full.*

"The main danger of rickets is that it decreases the resistance and secondly, that it causes deformities, especially malformation of the pelvis which in female patients lead to difficulties in childbirth with danger to mother and to child. Every infant should receive some antirachitic protective agent...The latest method which we have at hand is the use of irradiated food products, products which have been rendered active by subjecting them to ultra-violet rays. The most significant of these products is milk. Every infant has to depend upon milk for its nourishment and depends upon it at the very time of life when rickets is rampant; in other words, during the first year or eighteen months of its existence. From this point of view, *irradiated or activated milk possesses a distinct advantage over all other measures of prophylaxis against rickets.* It furnishes an automatic means of treatment, one which does not depend upon the co-operation of the mother..."

Dryco is never advertised to the Laity.

Prescribe

DRYCO

Made from superior quality milk from which part of the butterfat has been removed, irradiated by the ultra-violet ray, under license by the Wisconsin Alumni Research Foundation (U. S. Pat. No. 1,680,818) and then dried by the "Just" Roller Process. Send for samples and literature.

All Dryco, in the hands of druggists is irradiated.

Send for Clinical Data and Samples

The* DRY MILK COMPANY, *Inc.

205 EAST 42nd STREET, DEPT. CW NEW YORK, N. Y.

PORTRAIT OF A LADY WHO LOVES A DOCTOR

The very big smile on this very little lady is a greeting to her doctor. She has quite a case on him. And he, shameless fellow, on her. But the course of their love is studded with pitfalls. For when clinical thermometers, tongue depressors, and medicine come in the door, love is likely to fly out of the window.

You can imagine then how gratefully he (and so many of his fellow physicians) welcomed an innovation like Parke-Davis Haliver Oil with Viosterol-250 D! Given in dainty drops instead of terrifying teaspoonfuls, it has simplified and solved the troublesome question of how to administer vitamins A and D scientifically and at the same time *pleasantly.* And it has removed an important threat to the affection that exists between so many doctors and their little patients. As you know, Parke-Davis Haliver Oil with Viosterol-250 D is Council-Accepted. It contains not less than 80 times the vitamin A potency of a standard cod-liver oil testing 400 U. S. P. units per gram. It is equal to Viosterol-250 D in vitamin D potency. Supplied in 5-cc. and 50-cc. vials with dropper and in 3-minim capsules, boxes of 25 and 100. You are invited to write our Medical Service Department, at Detroit, for a sample box of capsules and literature.

●

PARKE, DAVIS & CO.

DETROIT, MICH.

The World's Largest Makers of Pharmaceutical and Biological Products

POTTENGER SANATORIUM AND CLINIC
FOR DISEASES OF THE CHEST MONROVIA, CALIFORNIA

Twenty-eight years' experience in meeting the problems of the tuberculous patient.

Located in the foothills of the Sierra Madre mountains, at an elevation of 1000 feet. Sixteen miles east of Los Angeles, on the main line of the Santa Fe. Reached also by the Pacific Electric. Equipped for the scientific treatment of tuberculosis and other diseases of the chest. Beautiful surroundings. Close personal attention. Excellent food.

A clinic for the study and diagnosis of all diseases of the chest, including asthma, lung abscess and bronchiectasis is maintained in connection with the institution.

Weekly rates from $25 up, including medical attention, medicines (except expensive remedies), and general nursing. Extra charge for operative measures except pneumothorax.

Los Angeles Office
WILSHIRE MEDICAL BUILDING
1930 Wilshire Boulevard

For particulars address:
POTTENGER SANATORIUM
MONROVIA, CALIFORNIA

TWENTY-FIVE YEARS AGO

(Continued from Page 14)

Flower Mission clinics and a few private office cases. We have used chiefly Vicario's, the French solution of tuberculin, it being self-evident important to have a reliable and standard preparation.

From an article on "The Housing Problem" by Titian Coffey, M. D., Los Angeles.

I wonder how many of you realize in the full sense that both San Francisco and Los Angeles are facing, and have been for some years, a housing problem? . . .

Address of Doctor Kreutzmann Upon the Opening of the New German Hospital.

. . . But this new hospital is the crowning success to all this labor. Not only is the building safe, spacious and airy, it is equipped and provided with everything to accomplish successful medical treatment. There is an old saying among physicians: "A cure should be *'cito, certe et jucunde.'*" Certainly the conditions in this new hospital are such that it will be possible to restore patients to health quickly, safely and if not exactly agreeably, at least not disagreeably. . . .

BOARD OF MEDICAL EXAMINERS

(Continued from Text Page 288)

86 3/9, 86 3/9, 84 3/9, 91 2/9, 83 5/9 85 4/9, 83 7/9, 87 7/9, 88 5/9, 87 2/9 92 6/9, 84 8/9, 83 4/9, 86 1/9, 87 8/9 87, 85 1/9, 85 8/9, 88 8/9, 78 2/9, 88 3/9 87 3/9, 89 6/9, 86 1/9, 88 8/9, 82 3/9 86 2/9		
Creighton	1932	86
Harvard	1933	81 7/9
Loyola	1932, 83 5/9; 1933, 81 8/9, 85 1/9	
Marquette	1933	81
New York Homeopathic Medical College and Flower Hospital	1932	88 6/9, 82 4/9
Northwestern	1929, 89 7/9; 1932, 81 4/9; 1933	90 3/9, 85 89 6/9, 81 7/9, 90 1/9, 88 7/9
Rush	1931, 86 1/9; 1933	84 5/9, 89 3/9 85 4/9, 86 1/9, 87, 85 6/9, 90 4/9
St. Louis University	1933	88 6/9
Stanford	1932, 83 5/9; 1933	90 4/9, 87 1/9
Tulane	1932	84
University of California	1933	87 2/9, 86 8/9 82 7/9, 89 2/9, 87 4/9, 90 3/9, 89 3/9, 86 3/9
University of Colorado	1932, 80 6/9; 1933	85
University of Illinois	1931	88 8/9
University of Michigan	1932	86 2/9
University of Minnesota	1932, 80 4/9; 1933, 89 3/9	
University of Oregon	1932	82 1/9, 88 3/9
University of Pennsylvania	1933	85 2/9
University of Southern California	1933	88 7/9, 87 3/9 83 5/9, 85 1/9, 88 2/9, 86 6/9

FAILED

American Medical Missionary College	1902	55
College of Medical Evangelists	1933	*26 4/9 †75 8/9
University of Charkov, Russia	1924	66 2/9
University of St. Thomas Faculty of Medicine and Surgery, Manila, P. I.	1924	62 7/9

* * *

News Items

Investigation by the board resulted in the closing of the so-called "Medical Research Bureau," which had allegedly distributed sex literature making impossible claims for its product, known as "88," and the arrest of the asserted operator, who gave his name as James Bernard Hall of Los Angeles.

This man is understood to have since disappeared. His bail has been forfeited and a bench warrant issued for his arrest. He is said to have transferred his operations to Southern California.

---

* Illness prevented finishing examination.

† Fell below 60 per cent in two subjects.

(Continued on Next Page)

Southern Sierras Sanatorium

for
Tuberculosis and Allied Affections
BANNING, CALIFORNIA

SERVICE...

A commodity that cannot be satisfactorily pictured or described

EVIDENCE of the quality of service rendered in the *Southern Sierras Sanatorium* is furnished by its sustained reputation for satisfaction.

PROOF of the quality of service rendered can be secured only by an actual sojourn in this sanatorium.

SEND your next patient to this restful retreat, where sympathetic interest awaits him, and we feel confident of your approval.

C. E. ATKINSON, M. D., *Medical Director*

BANNING

90 miles east of Los Angeles on main line of S. P.
Near but not upon the desert (altitude 2,400)
Unsurpassed climate, free from extremes.

Modern equipment and treatment
High ethical standards
Progress reports cheerfully furnished

BOARD OF MEDICAL EXAMINERS

(Continued from Preceding Page)

Pleading guilty to charges of violation of the Medical Practice Act, two alleged Los Angeles beauty specialists, whose treatments are said to have resulted in the death of a Los Angeles woman, were given a 180-day suspended sentence and ordered to leave California for a period of two years.

The pair, whose arrest followed investigation by the board, are Christmas E. White and Anna Aeberli.

Vigilance of the board has resulted in the conviction of a man giving the name of Paul Pretzell and representing himself as a physician and surgeon from New York, being given a 180-day sentence in the Los Angeles county jail. Investigation disclosed that he possessed no medical credentials.

The coöperation of the board in taking punitive action against doctors found to be violating the narcotic laws and issuing narcotic prescriptions has received commendation from the Federal Government.

Commenting on the activity of the medical board in dealing with doctors who abuse their narcotic prescription privileges, H. J. Anslinger, Chief of the Federal Bureau of Narcotics, in a letter received by Secretary Pinkham, said:

"While we do receive a fair degree of coöperation in one or two other states, I can only say that if the same coöperation extended by the California board were duplicated in the other states we could hardly be said to have a problem to solve with reference to continued narcotic abuses by licensed physicians."

The board conducted investigations in forty cases during the past month. Seven violators of the Medical Practice Act were hailed into court and fined $300.

Commenting on the 1933 directory published by the California Board of Medical Examiners, Ralph W. Ellis, M. D., secretary-treasurer of the Phi Rho Sigma Fraternity, Cleveland, Ohio, wrote: "I wish to tell you how valuable your directory is to us, especially in tracing lost members. . . . As yours is by far the best directory we have been able to find, we wonder if you know of any other states publishing a similar volume."

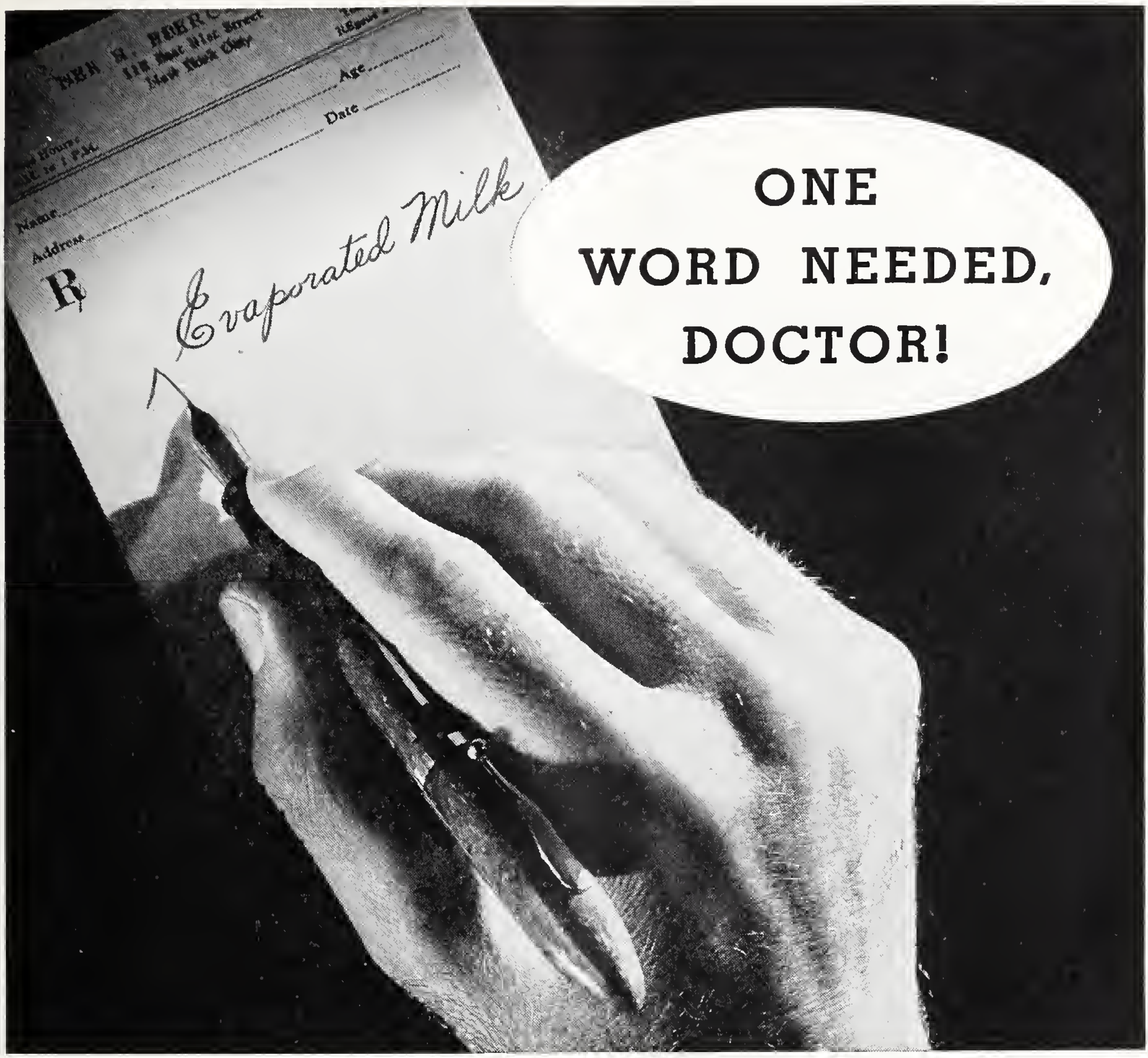
Eyesight swindlers have again appeared in California, it being reported that individuals giving the name of "Dr." John J. Harris and "Dr." W. O. Wilson recently buncoed a Santa Barbara woman out of $112, following eye treatment given in the manner related in the 1932 annual report of the Board of Medical Examiners.

Reports relate that on August 29, 1933, Arthur A. Pons pleaded guilty in the Justice Court of San Diego Township to a violation of the Medical Practice Act and was sentenced to serve sixty days in the county jail, suspended for six months on condition that he not violate the law during that time.

Reports relate that on August 4 Ralph S. Willard was found guilty in Los Angeles of violation of the Medical Practice Act and was sentenced to pay a fine of $300 or, in default thereof, serve 150 days in the city jail, the sentence being modified to one year probation.

"Dr. S. A. Barber, formerly of Porterville, returned today after two years of exile imposed by the Tulare County Superior Court. Doctor Barber entered court this morning and, following out provisions of the legal statute, pleaded not guilty to a charge filed against him two years ago and the case was dismissed, thus

(Continued on Page 21)



YOUR Evaporated Milk formula may be ever so specific as to the ingredients, measurements, time of feeding, etc.—yet may leave one important decision to the mother and her chance adviser.

What brand of Evaporated Milk to use?

You have in mind certain clearly defined standards of quality in Evaporated Milks. But the mother—or her neighborly adviser—has no such standards to guide her. In this decision, the mother needs *your* advice.

The Borden Company produces Evaporated Milks in which the physician will find the quality he demands for infant feeding. For seventy-five years Borden's has maintained the highest standards of milk selection and the most rigid requirements throughout the process of manufacture. These standards and requirements prevail today in the production of all the Borden brands . . . Borden's Evaporated Milk . . . Pearl . . . Maricopa . . . Oregon . . . St. Charles . . . Silver Cow. All these Borden brands are accepted by the American Medical Association Committee on Foods.

Write for compact, simple infant feeding formulary and scientific literature. Address The Borden Company, Dept. 326, 350 Madison Avenue, New York, N. Y.

ACCEPTED AMERICAN MEDICAL ASSN. Committee on Foods

The Borden Company was the first to submit evaporated milk for acceptance by the Committee on Foods of the American Medical Association. Borden's was the first evaporated milk to receive the seal of acceptance of this Committee.

Borden's

NRA U.S. WE DO OUR PART

EVAPORATED MILK

"WILL YOU PLEASE STOP THAT CRY-ING!"

If this tired, worried, over-worked mother were using Pablum for her babies' cereal feedings, she could have slept that extra much-needed hour instead of losing her temper while her children clamor for breakfast. For she can prepare Pablum in an instant, directly in the cereal bowl, simply by adding water or milk of any temperature—salt, cream and sugar for the older child and herself.

Getting up an hour earlier in the morning is an inconvenience for most persons, but for the mother of young babies it is a hardship, sometimes almost tragic, frequently nullifying the best-planned pediatric advice.

This is especially true in the case of the nursing mother whose supply and quality of breast milk are affected by emotional shocks resulting often in agalactia and sometimes giving rise in the baby to diarrhea, colic, and even convulsions. Furthermore, the mother's emotional stress brings about a train of behavior on her part which is reflected in the child's psychologic reactions so that a vicious circle of bad habit formation is set up.

From this angle, the recent introduction of the pre-cooked form of Mead's Cereal, known as Pablum, assumes new importance in the doctor's psychological handling of both mother and child, quite aside from its nutritional value.*

Because Pablum can be prepared in a minute, the mother can sleep the extra hour she would otherwise be compelled to spend in a hot kitchen cooking cereal. Added rest means better poise, so that petty annoyances do not bring jaded nerves. Prompt feedings prevent many childhood tantrums, and a satisfied baby usually eats better and enjoys better digestion and growth.

---

*Like Mead's Cereal, Pablum represents a great advance among cereals in that it is richer in a wider variety of minerals (chiefly calcium, phosphorus, iron, and copper), contains vitamins A, B, E, and G, is base-forming and is non-irritating. Added to these special features, it is adequate in protein, fat, carbohydrates, and calories. Pablum consists of wheatmeal, oatmeal, cornmeal, wheat embryo, yeast, alfalfa leaf, and beef bone.

MEAD JOHNSON & COMPANY, Evansville, Indiana, U.S.A.

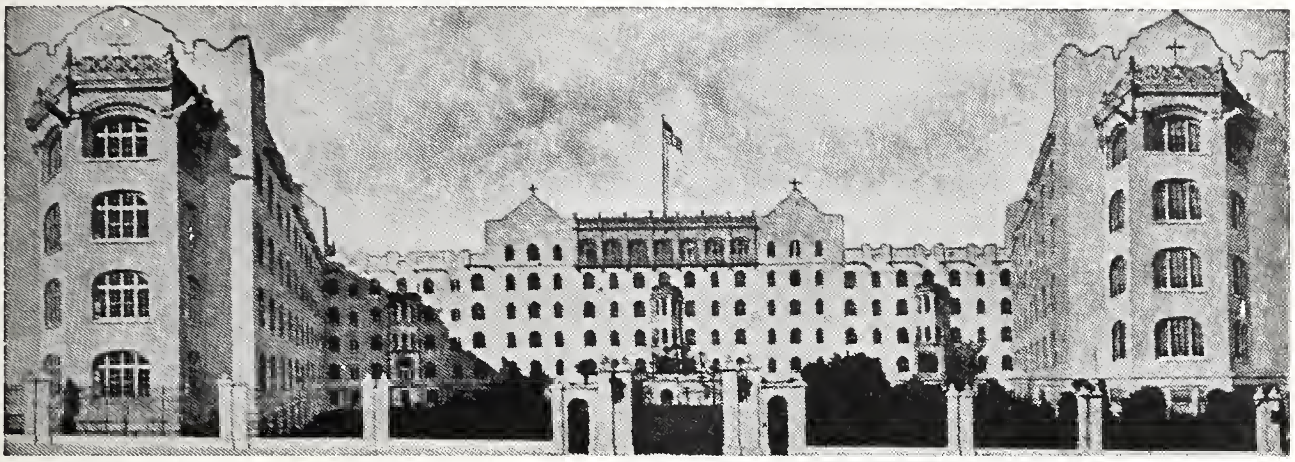
Please enclose professional card when requesting samples of Mead Johnson products to cooperate in preventing their reaching unauthorized persons

ST. MARY'S HOSPITAL

2200 HAYES STREET
SAN FRANCISCO

Conducted by Sisters of Mercy

Accredited by the American Medical Association. Open to all members of the California Medical Association. Accredited School of Nursing and Out-Patient Department.



PROFESSIONAL STAFF

Surgery
T. Edward Bailly, Ph.D., F.A.C.S., M.D.
Guido Caglieri, B.Sc., F.R.C.S., F.A.C.S., M.D.
Edward Topham, F.A.C.S., M.D.
James Eaves, M.D.
F. F. Knorp, M.D.
Hubert R. Arnold, F.A.C.S., M.D.
Edmund Butler, F.A.C.S., M.D.
Rodney A. Yoell, M.D.
T. T. Shea, M.D.

Urology
Charles P. Mathe, F.A.C.S., M.D.
George F. Oviedo, M.D.
Thomas E. Gibson, F.A.C.S., M.D.

Medicine
J. Haderle, M.D.
H. V. Hoffman, M.D.
Stephen Cleary, M.D.
A. Diepenbrock, M.D.
J. H. D. Roger, M.D.
Thomas J. Lennon, M.D.
James M. Sullivan, M.D.

Heart
Harry Spiro, M.D.

Obstetrics
Phillip H. Arnot, M.D.
Charles C. Mohun, M.D.

Eye, Ear, Nose and Throat
F. J. S. Conlan, F.A.C.S., M.D.
L. A. Smith, M.D.
J. J. Kingwell, M.D.
T. Stanley Burns, M.D.

Orthopedics
Thomas J. Nolan, M.D.
J. J. Loutzenheiser, M.D.

Pediatrics
Randolph G. Flood, F.A.A.P., M.D.

Neurological Surgery
Edmund J. Morrissey, M.D.

Thoracic Surgery
William B. Faulkner, Jr., M.D.

Gastroenterology
Edward Hanlon, M.D.
Frank A. Kinslow, M.D.

Neurology
Milton B. Lennon, M.D.

Dermatology
H. Morrow, M.D.
Harry E. Alderson, M.D.

Pathology
Elmer W. Smith, M.D.

Radium Therapy
Monica Donovan, M.D.

Dentistry
Thomas Morris, D.D.S.
Francis L. Meagher, D.D.S.

BOARD OF MEDICAL EXAMINERS

(Continued from Page 18)

restoring his right to vote. The legal statute provides that when a defendant is granted probation and follows out all terms of probation, he may reënter court and plead guilty and the charge shall be dismissed. The former Porterville physician was sentenced to San Quentin Prison on a charge of abortion, but was granted probation on two provisions, one that he remain out of Tulare County for two years, and the second, that he comply with all laws." (Visalia *Times-Delta,* August 7, 1933.)

"Pleading guilty to issuing illicit narcotic prescriptions, Dr. George B. Tome, West Los Angeles physician, today was under sentence to serve six months in the Ventura County jail, after which he will be on probation for four and a half years. . . . A proviso of the probationary period is that the doctor must refrain from handling narcotics or associating with persons who do so. 'This type of narcotic offense is one that altogether too frequently means a living death to other victims,' Federal Judge Hollzer said in passing sentence. Federal officers said that Doctor Tome's activities originated at the National Soldiers' Home, and that he had prescribed more than a thousand narcotic prescriptions in six months" (Los Angeles *Herald-Express,* August 8, 1933). Doctor Tome is a graduate of an osteopathic school, under jurisdiction of the Board of Osteopathic Examiners.

"Dr. Virginia Adelina Wilson, thirty-six, formerly university psychologist at Berkeley, held in San Diego for the murder of two women associates, will wage a bitter court battle against the charges, dispatches from that city indicate. Arraigned in San Diego court yesterday for stabbing to death Dr. Anita Muhl, forty-two, noted psychiatrist, and Ann Kieffe, fifty, lifelong friends, Doctor Wilson pleaded not guilty. She also entered a plea to the murder charges of not guilty by reason of insanity. She is a physician and formerly a teacher in the College of Medicine at Berkeley . . . " (San Francisco *Examiner,* September 16, 1933). No one by the name of Virginia Adelina Wilson is licensed under the Medical Practice Act; however, the 1931 American Medical Association directory lists one by that name as a graduate of Washington University School of Medicine, 1928, licensed in Missouri the same year and located in Utica, New York.

"Captured by detectives when, it is charged, he exchanged morphin and opium for a stolen microscope, Dr. Arthur Nelson, thirty-five, prominent Los Angeles physician, was arrested last night on charges of violation of the State Poison Act and receiving stolen property. . . . The officers said that earlier in the day they had seized Pat Wood, thirty-one, when the latter emerged from a physician's office in the Fourth and Hill Street Building with a microscope. Wood confessed he had stolen the instrument. Then police reported that Wood revealed that he had ransacked many doctors' offices and said that he had exchanged loot for narcotics at Doctor Nelson's office. Jordan and Matthews prepared a trap and, according to their statement, they watched while Wood entered Doctor Nelson's office and handed over the stolen microscope. In exchange the burglar suspect received two bottles of morphin, a large quantity of opium and a two-dollar bill, detectives said. Later the officers accompanied the physician to his home at 6825 Trolley Way, del Rey, where they confiscated a large number of surgical instruments valued at several thousand dollars." (Los Angeles *Illustrated Daily News,* August 30, 1933.)

(Continued on Page 24)

FRANKLIN HOSPITAL 14th and Noe Streets

BEAUTIFULLY located in a scenic park—Rooms large and sunny—Fine Cuisine—Unsurpassed Operating, X-Ray and Maternity Departments.

⁂

Training School for Nurses

⁂

For further information
Address
FRANKLIN HOSPITAL
San Francisco

FREDERICK RAY

Collection Specialist

Operating
"ADJUSTMENT SERVICE"
Since 1918
Wilson Building • First and Spring • Los Angeles

Detailed information and references furnished on request. Mail in your delinquent accounts now. Membership in various agencies permits not only United States but a world-wide collection service. Get your debtors out of **your** books and into **mine.**

MEMBER

- Commercial Law League of America
- American League of Collection Agencies
- California Association of Mercantile Agencies

Depository: Security First National Bank, First and Spring, Los Angeles.

Licensed by State of California.

Bonded by U. S. Fidelity and Casualty and A. C. S., Detroit, Mich.

A BLEND OF *Finely Powdered, Dehydrated* SPINACH, TOMATOES, CARROTS and IRRADIATED YEAST, *Specially Prepared for Infant Feeding*

ACCEPTED
AMERICAN MEDICAL ASSN.
Committee on Foods

BioVegetin

In recognition of the desirability of vegetables in infant feeding, BioVegetin offers to physicians the opportunity to incorporate into the infant dietary a vegetable mixture that provides the benefits of fresh vegetables with the certainty that the exact prescribed quantities will be fed.

●

BioVegetin is a palatable, finely powdered mixture of dehydrated spinach, tomatoes, and carrots, to which has been added Vitamin D in the form of specially treated, powdered, irradiated yeast by Steenbock Process under license from the Wisconsin Alumni Research Foundation.

BioVegetin provides the vitamins A, B, C, G and the minerals Calcium, Iron and Copper naturally contained in these vegetables, together with the added Vitamin D. The mixture of BioVegetin with milk offers these vitamins in protective quantities for the bottle-fed infant. Easily added to the milk mixture, BioVegetin affords a simple and safe means of giving vegetables to the very young infant. The vegetable fibre is finely divided to prevent gastro-intestinal irritation.

As determined in clinic and laboratory, BioVegetin affords protection against scurvy and rickets without the supplementary feeding of other vegetables, orange juice, cod-liver oil or related products.

The vegetables in BioVegetin are dehydrated by a special process and represent 16 to 25 times their weight in fresh, bulk vegetables. The constancy of the Vitamin D content is under the supervision and control of the Wisconsin Alumni Research Foundation.

The yeast has been carefully auto-claved to destroy its viability, thereby preventing fermentation.

Doctor: May we send you sample of BioVegetin?

COMPARATIVE CHEMICAL ANALYSES

Each 6½ gram ration of BioVegetin contains a quantity of vitamin C equal to that in 22 cc. of fresh orange juice and 933 Steenbock units of vitamin D, the equivalent of 15½ teaspoonfuls of plain cod-liver oil or 1½ teaspoonfuls of 10-D cod-liver oil or 12 drops of 250-D Viosterol in oil.

	BioVegetin	Fresh Tomatoes	Fresh Spinach	Fresh Carrots
Moisture	10.0	94.3	88.2	90.0
Ash	6.1	0.5	1.0	1.0
Iron (Fe)	0.013	0.0004	0.0026	0.006
Calcium (Ca)	0.51	0.011	0.067	0.056
Copper (Cu)	0.0012	0.00007	0.00012	0.00007
Fat	3.4	0.4	0.3	0.4
Protein	20.0	0.9	2.1	1.1
Crude Fibre	6.5	0.6	1.0	1.1
Carbohydrates	53.4	3.9	3.2	9.3
Calories, per oz.	94	6.5	6.8	12.7

The ease with which BioVegetin can be incorporated into the milk mixture (or the boiled water allowance of breast-fed infants) contrasts most favorably with the problem of feeding the supplementary orange juice, cod-liver oil, cooked and strained vegetables, and the difficulty of cleaning and preparing the latter.

BioVegetin

500 NORTH DEARBORN ✣ PRODUCTS INCORPORATED ✣ CHICAGO ✣ ILLINOIS
WESTERN OFFICE: 112 WEST NINTH STREET, LOS ANGELES, CALIF.

BioVegetin is with the new Byrd Expedition to the South Pole

NEUROSYPHILIS

Clinical reports indicate that forty to fifty per cent of cases of early paresis show symptomatic improvement under Tryparsamide therapy. The treatment does not disrupt the patient's daily routine of life and is available through the services of his personal physician. The cost of Tryparsamide has been reduced. The present price to physicians is, 1 Gm. ampul 40 cents; 2 Gm. ampul 55 cents; 3 Gm. ampul 70 cents. Clinical reports and treatment methods will be furnished on request.

Tryparsamide

Mfg. by arrangement with The Rockefeller Institute for Medical Research — Patentee and Registrant

MERCK & CO. INC.
Rahway, N. J.

Ten Acres of Beautiful Grounds

COMPTON SANITARIUM and LAS CAMPANAS HOSPITAL
COMPTON, CALIF.

30 minutes from Los Angeles. 130 beds for neuropsychiatric patients. 40 beds for medical-surgical patients. Clinical studies by experienced psychiatrists. X-ray and clinical laboratories. Hydrotherapy. Occupational therapy. Ten acres landscaped garden. Tennis. Baseball. Motion pictures. Scientifically sound-proofed rooms for psychotic patients. Accommodations ranging from ward beds to private cottages.

GLENN MYERS, M. D., ***Medical Director***
Philip J. Cunnane, M. D. G. Creswell Burns, M. D.
Helen Rislow Burns, M. D.
Office: **1052 West 6th Street, Los Angeles**

BOARD OF MEDICAL EXAMINERS

(Continued from Page 21)

"Dr. H. H. Look, who was accused by a 19-year-old girl of having performed an illegal operation, which subsequently proved fatal to her, today refused to submit to questioning by Assistant District Attorney Guy P. Johnson. The doctor, when asked by Johnson to come to the District Attorney's office for interrogation, referred the prosecutor to Attorney Ray Coughlin. Coughlin, representing the doctor, stated: 'Doctor Look has nothing to say.' . . . Mrs. Jort stated, however, that her daughter (Mrs. Mildred Hylton) 'told her she had been operated upon by Doctor Look in the latter's office in the Bryte Building on August 30.' . . . Mrs. Hylton died Saturday at the Sacramento Hospital, where she went for treatment three days before. The girl refused to make a 'dying' statement, and the law prohibits the introduction of any other statement into the court proceedings." (Sacramento *Bee*, September 7, 1933.)

"Police search for a man who said he was Dr. Willard Thompson of the Mayo Brothers' Clinic at Rochester, developed yesterday into an intensive police hunt for Wilbur Lester Parker, notorious impostor and criminal, as medical authorities detected similarities of description and *modus operandi.* Originally believed a victim of a possible kidnap plot, the man who claimed he was Doctor Thompson vanished from San Francisco early Friday morning. Also missing was a piece of valuable medical apparatus from St. Joseph's Hospital, according to reports. . . . Possibility that the man reported missing in mysterious circumstances is Parker was advanced to the police

The Oaks Sanitarium *Los Gatos, California*

A Moderately Priced Institution for the Scientific Treatment of Tuberculosis

FOR PARTICULARS AND BOOKLET, ADDRESS THE OAKS SANITARIUM, LOS GATOS

William C. Voorsanger, M. D.
Medical Director

San Francisco Office
490 Post Street

by Dr. Charles B. Pinkham, Secretary of the State Medical Board. . . . Because he represented himself to be from the Mayo Clinic, Dr. E. O. Hinman, dentist, 135 Stockton Street, asked him to visit one of the dentist's patients ill from a heart affliction in Oakland. . . . Subsequent investigation disclosed, according to Doctor Pinkham, that no such doctor as Willard Thompson is on the staff of the Mayo Clinic at Rochester." (San Francisco *Examiner,* September 12, 1933.)

"Dr. Harry Soferenko, 34-year-old Hollywood physician, was arrested late yesterday and jailed on a charge of perjury growing out of his testimony at a recent robbery trial of Joseph Rosenthal, attorney, police reported. Soferenko, who was indicted by the county grand jury, supported Rosenthal's alibi at the latter's trial, which ended in the attorney's conviction of having robbed a gasoline station here last March 25. Rosenthal is in jail pending a hearing on his motion for new trial" (Los Angeles *Examiner,* September 2, 1933.)

California Rattlesnakes.—A recent article in this publication, pertaining to the emergency treatment of snakebite, referred to two species of rattlesnakes in California, the Pacific rattler (Crotalus confluentus oreganus) and the Texas rattler, or Desert Diamond rattlesnake (Crotalus atrox). The curator of the Department of Herptology of the California Academy of Sciences, Joseph R. Slevin, has advised through C. E. Grunsky, president of the Academy, that six other species of rattlesnake are found in California. They are as follows:

Crotalus confluentus mitchellii—Bleached rattlesnake.

Crotalus confluentus stephensi—Panamint rattlesnake.

Crotalus confluentus lutosus—Great Basin rattlesnake.

Crotalus ruber—Red Diamond rattlesnake.

Crotalus scutulatus—Mojave rattlesnake.

Crotalus cerastes—Horned rattlesnake or Sidewinder.

Of these, the Mojave rattlesnake (Crotalus scutulatus) is widely distributed throughout the Mojave Desert region. The California Academy of Sciences has made a motion picture, showing all the species of rattlesnakes found in California, illustrating the method of extraction of venom and presenting much valuable information relative to these reptiles.—*Weekly Bulletin,* California Department of Public Health.

Health officers of California by counties as of August 1, 1933.

Alameda County	Dr. I. O. Church, Oakland
Alameda	Dr. F. B. Galbraith
Albany	Dr. Martin J. Lacey
Berkeley	Dr. Frank L. Kelly
Emeryville	Dr. Emily Emery
Hayward	Nelson E. Clemens, D. V. M.
Livermore	Dr. Paul E. Dolan
Oakland	Dr. Arthur Hieronymus
Piedmont	Dr. Harry J. Smith
Pleasanton	Dr. Richard Heinz
San Leandro	Dr. Luther Michael
Alpine County	Dr. F. H. Harrison, Minden, Nevada
Amador County	Dr. G. L. Lynch, Amador City
Amador City	Mr. Ben White
Jackson	Mr. Earl J. Garberini
Plymouth	Mr. Pete Laverone
Sutter Creek	Mr. Grant Shealor
Butte County	Dr. Raymond Kilduff, Oroville
Biggs	Mr. Leon Brink
Chico	Mr. Charles E. Tovee
Gridley	Dr. W. S. Lavy
Oroville	Mr. A. A. Davis
Calaveras County	Dr. George P. Cooper, Angels Camp
Angels Camp	Dr. E. W. Weirich
Colusa County	Dr. G. W. Desrosier, Colusa
Colusa	Dr. George W. Desrosier
Williams	Dr. Charles F. Keith

(Continued on Next Page)

The California Sanatorium

Belmont (San Mateo County), California

FOR THE TREATMENT OF TUBERCULOSIS

Completely Equipped *Excellent Cuisine*

DR. MAX ROTHSCHILD
Medical Director

DR. HARRY C. WARREN
Assistant Medical Director

Rates and Prospectus on Request

San Francisco Office
384 Post Street
Phone DAVENPORT 4466

Address: BELMONT, CALIF.
Phone BELMONT 100
(3 Trunk Lines)

For use in the Prevention and Treatment of the Acid-Ash Type of

ACIDOSIS

California Lima Bean FLOUR!

Alkalinity, of course, neutralizes *acidity*. And Limas are one of the most alkaline foods known—41.65 per 100 grams!

To meet a definite demand from the medical profession, we have developed, to a high degree of fineness, a Lima Bean FLOUR—for making non-acid breads, muffins, pancakes and waffles for Basic Diet menus!

Lima FLOUR— is available in 10-lb. bags at $1.20, and in 100-lb. bags at $10.00. Upon receipt of price and delivery instructions your order will be shipped parcel post or express collect. Send orders, and make check or money order payable to—

CALIFORNIA LIMA BEAN
GROWERS ASSOCIATION
Oxnard, California

(Continued from Preceding Page)

Contra Costa County	Dr. W. A. Powell, Martinez
Antioch	Dr. Fred P. Nevius
Concord	Under county supervision
El Cerrito	Dr. E. R. Jackson
Hercules	Under county supervision
Martinez	Under county supervision
Pinole	Under county supervision
Pittsburg	Dr. H. E. Peters
Richmond	Dr. Charles R. Blake
Walnut Creek	Under county supervision
Del Norte County	Dr. Wilson Stegeman, Crescent City
Crescent City	Dr. F. Stump
El Dorado County	Dr. A. A. McKinnon, Placerville
Placerville	Mr. Glen D. Stevens
Fresno County	Dr. James E. Pendergrass, Clovis
Clovis	Dr. M. S. McMurtry
Coalinga	Mr. W. T. Hayes
Firebaugh	Mr. Frank Borrecco
Fowler	Mr. Retel L. H. Fernside
Fresno	Dr. C. Mathewson
Kingsburg	Dr. Ewald A. Larson
Parlier	Mr. T. E. Williams
Reedley	Dr. R. E. Allen
Sanger	Dr. Benjamin H. Viau
San Joaquin	Under county supervision
Selma	Dr. D. V. Wiebe
Glenn County	Dr. Etta S. Lund, Willows
Orland	Dr. T. H. Brown
Willows	Dr. Etta S. Lund
Humboldt County	Dr. Charles C. Falk, Jr., Eureka
Arcata	Dr. B. Cooper
Blue Lake	Dr. George P. Purlenky, Arcata
Eureka	Dr. W. J. Quinn
Ferndale	Dr. O. B. Barron
Fortuna	Dr. H. W. Comfort
Imperial County	Dr. Warren F. Fox, El Centro
Brawley	Dr. J. L. Parker
Calipatria	Dr. J. H. Hutton
Calexico	Dr. W. T. Talbott
El Centro	Under county supervision
Holtville	Dr. John D. Keye
Imperial	Dr. H. V. Gray
Westmoreland	Under county supervision
Inyo County	Dr. Harvey W. Crook, Bishop
Bishop	Mr. C. A. Collins
Kern County	Dr. Joe Smith, Bakersfield
Bakersfield	Dr. P. J. Cuneo
Delano	Under county supervision
Maricopa	Dr. K. D. Cook
Taft	Dr. Oran Newton
Tehachapi	Dr. R. G. Doupe

(Continued on Page 28)

③ —about Cigarettes

There are 6 types of home-grown tobaccos that are best for cigarettes

BRIGHT TOBACCOS
U. S. Types 11, 12, 13, 14—produced in Virginia, North and South Carolina, and parts of Georgia, Florida and Alabama.

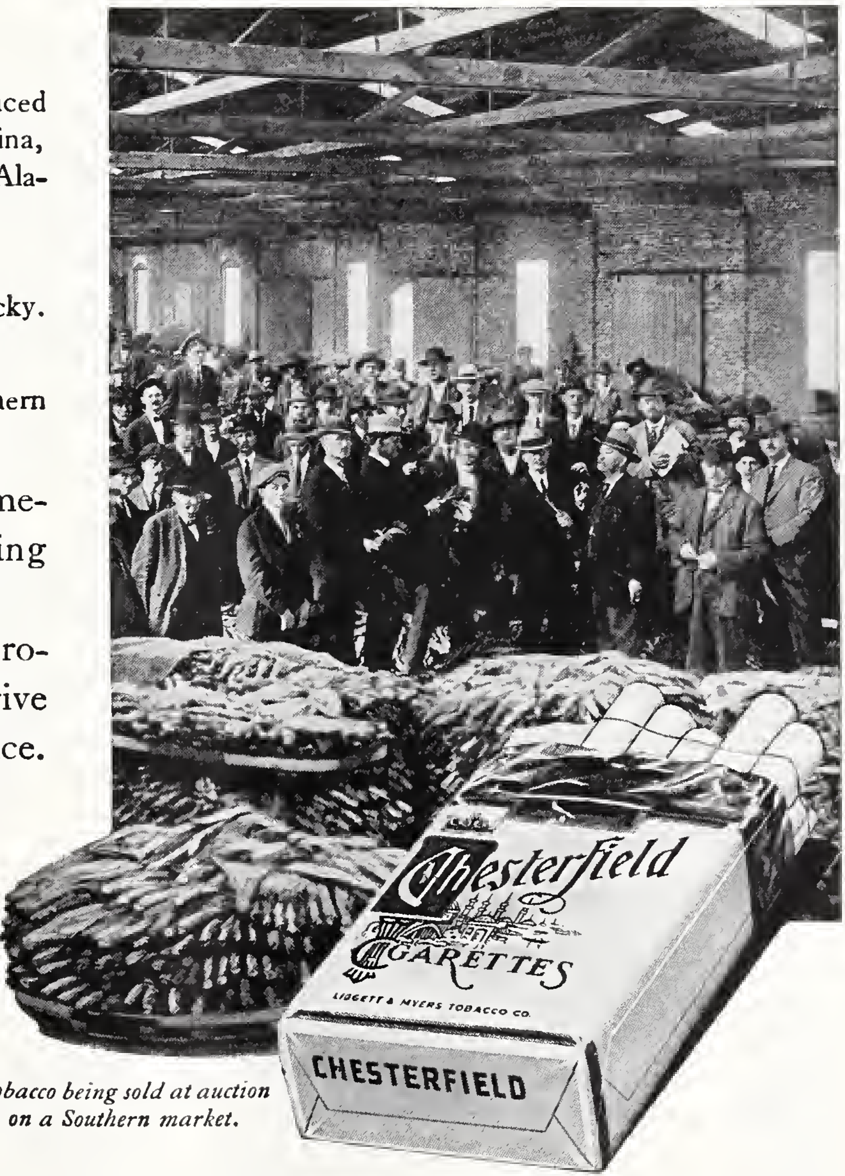
BURLEY TOBACCO
U. S. Type 31—produced in Kentucky.

MARYLAND TOBACCO
U. S. Type 32—produced in Southern Maryland.

These are the kinds of home-grown tobaccos used for making Chesterfield Cigarettes.

Then Chesterfield adds aromatic Turkish tobacco to give just the right seasoning or spice.

Chesterfield ages these tobaccos for 30 months —2½ years—to make sure that they are milder and taste better.



Tobacco being sold at auction on a Southern market.

Chesterfield

© 1933,
Liggett & Myers
Tobacco Co.

FRENCH HOSPITAL • Geary Street and Fifth Avenue
SAN FRANCISCO, CALIFORNIA

HENRI J. BAZERQUE, *President*
V. LABRUCHERIE, *Superintendent*
ALBERT AUBERT, *Secretary*
ELSIE E. MITCHELL, R. N., *Supt., School of Nursing*

A general hospital of 225 beds operating an accredited school of nursing, admitting all classes of patients except those suffering from mental diseases. Organized in 1851 and is operated by the French Mutual Benevolent Society, through a Board of Directors, a chief executive officer and staff. Accredited for intern training by the American Medical Association and approved by the American College of Surgeons

MEDICAL STAFF

Medicine
A. N. FREGEAU, M. D., Chief
E. S. KILGORE, M. D., Consultant in General Medicine
THOMAS G. INMAN, M. D., Consultant in Neuropsychiatry
MARK GERSTLE, JR., M. D., Consultant in Neurology
ERNEST D. CHIPMAN, M. D., Consultant in Dermatology
JAY JACOBS, M. D., Consultant in Dermatology
CABOT BROWN, M. D., Consultant in Lung Diseases
Urology
A. H. McNULTY, M. D.
ALVIN E. CERF, M. D.
SAMUEL A. GOLDMAN, M. D.
Radiology
LLOYD B. CROW, M. D.

Surgery
ASA W. COLLINS, M. D., F.A.C.S., Chief
HAROLD M. GILFILLAN, M. D., Assistant
CARL L. HOAG, M.D., F.A.C.S., Associate
E. B. TOWNE, M. D., Consultant in Neurological Surgery
EDMUND J. MORRISSEY, M. D., Consultant in Neurological Surgery
GEORGE WARREN PIERCE, M. D., Consultant in Plastic Surgery
W. L. ROGERS, M.D., Consultant in Lung Surgery
House-Visiting Department
COLEMAN A. BLOCK, M. D.
LOUIS D. RONCOVIERI, M. D.
Pediatrics
BRADFORD F. DEARING, M. D.

Anesthesia
HERMAN MARCUS, M. D., Chief
ELLIS D. HARMON, M. D.
Orthopedics
ALFRED RONCOVIERI, M. D.
FRANK A. LOWE, M. D.
RALPH SOTO-HALL, M. D., Consultant
Ophthalmology and Oto-Laryngology
E. C. FABRE-RAJOTTE, M.D., Chief
VICTOR D'ERCOLE, M. D., Assistant
Obstetrics and Gynecology
W. J. HAWKINS, M. D., F. A. C. S.
R. F. GRANT, M. D.
J. K. PLINCZ, M. D.
CHESTER L. COOLEY, M. D.
Pathology
MARION H. LIPPMAN, M.D., Director Clinical and Pathological Laboratory
DAVID A. WOOD, M.D., Pathologist

QUALITY SERVICE DEPENDABILITY

DIEDERICH OPTICAL COMPANY, INC.
WHOLESALE AND MANUFACTURING OPTICIANS

OCULISTS' PRESCRIPTIONS FILLED

The prescription service we offer is backed by our name, which has been attained by doing high grade work for many years.

649 SOUTH OLIVE STREET LOS ANGELES, CALIFORNIA

(Continued from Page 26)

Kings County	Dr. C. G. Newbecker, Hanford
Corcoran	Dr. J. H. Van Vorhis
Hanford	Dr. J. A. Crawshaw
Lemoore	Dr. W. P. Byron
Lake County	Dr. Luther J. Calahan, Lower Lake
Lakeport	Mr. N. A. Wilcox
Lassen County	Dr. C. I. Burnett, Susanville
Susanville	Dr. George Scott Martin
Los Angeles County	Dr. J. L. Pomeroy, Los Angeles
Alhambra	Under county supervision
Arcadia	Under county supervision
Avalon	Under county supervision
Azusa	Under county supervision
Bell	Under county supervision
Beverly Hills	Dr. Charles F. Nelson
Burbank	Dr. T. H. Ransom
Claremont	Under county supervision
Compton City	Under county supervision
Covina	Under county supervision
Culver City	Under county supervision
El Monte	Under county supervision
El Segundo	Under county supervision
Gardena	Under county supervision
Glendale	Under county supervision
Glendora	Under county supervision
Hawthorne	Under county supervision
Hermosa Beach	Under county supervision
Huntington Park	Under county supervision
Inglewood	Under county supervision
La Verne	Under county supervision
Long Beach	Dr. G. E. McDonald
Los Angeles	Dr. C. W. Decker
Lynwood City	Under county supervision
Manhattan Beach	Under county supervision
Maywood	Under county supervision
Monrovia	Under county supervision
Montebello	Under county supervision
Monterey Park	Under county supervision
Pasadena	Dr. J. D. Dunshee
Pomona	Under county supervision
Redondo Beach	Under county supervision
San Fernando	Under county supervision
San Gabriel	Under county supervision
San Marino	Under county supervision
Santa Monica	Under county supervision
Sierra Madre	Under county supervision

(Continued on Page 30)

Exclusively Engaged
in providing

Professional Protection

Thirty-four Years
of

Specialized
Service

The Medical Protective Company
of Fort Wayne, Ind.
WHEATON • ILLINOIS

CALSO WATER

Palatable ALKALINE *Sparkling*

NOT A LAXATIVE

Calso Water: An efficient method of supplying the normal ALKALINE SALTS for counteracting ACIDOSIS.

Calso Water: Made of distilled water and the ALKALINE SALTS (C. P.) normally present in the healthy body.

Calso Water: Counteracts and prevents ACIDOSIS, maintains the ALKALINE RESERVE.

●

The Calso Company

524 Gough Street
San Francisco

Transportation Bldg.
Los Angeles

A FEW CHOICE LOCATIONS AVAILABLE

AT A REDUCED RENTAL SCHEDULE

APPLY TO

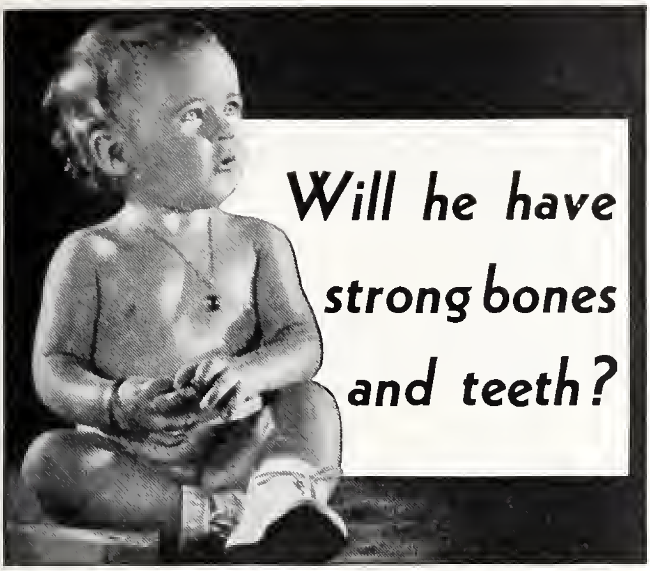
CHAS. W. SMITH
BUILDING MANAGER
ROOM 415 450 SUTTER STREET
Telephone GARFIELD 7221

FOUR FIFTY SUTTER

(Continued from Page 28)

Signal Hill	Dr. R. J. Striegel, Long Beach
South Gate	Under county supervision
South Pasadena	Dr. E. J. Johnston
Torrance	Under county supervision
Tujunga	Under county supervision
Vernon	Dr. H. F. Becker
West Covina	Under county supervision
Whittier	Under county supervision
Madera County	Dr. Lee A. Stone, Madera
Chowchilla	Dr. A. C. Atwood
Madera	Under county supervision
Marin County	Dr. J. H. Kuser, San Rafael
Belvedere	Dr. C. W. Clark, San Rafael
Corte Madera	Dr. L. L. Robinson, San Rafael
Fairfax	Dr. L. L. Robinson, San Rafael
Larkspur	Dr. L. L. Robinson, San Rafael
Mill Valley	Mr. Will Falley
Ross	Dr. George H. Willcutt
San Anselmo	Dr. Lloyd G. Tyler, San Rafael
San Rafael	Dr. H. M. Beck
Sausalito	Dr. C. F. Larson
Mariposa County	Dr. John S. Webster, Mariposa
Yosemite	Dr. Hartley G. Dewey
Mendocino County	Dr. H. O. Cleland, Ukiah
Fort Bragg	Dr. Royal Scudder
Point Arena	Mr. M. S. Scott
Potter Valley	Under county supervision
Ukiah	Dr. J. H. Hansen
Willits	Dr. Raymond Babcock
Merced County	Dr. James A. Parker, Merced
Gustine	Dr. A. W. Gustafson
Livingston	Mr. F. M. Ecclefield
Los Banos	Dr. L. R. Hillyer
Merced	Dr. A. S. Parker
Modoc County	Dr. John Stile, Alturas
Adin	Under county supervision
Alturas	Dr. W. E. Coppedge
Mono County	Dr. Gilbert A. Kelley, Bridgeport
Monterey County	Dr. R. M. Fortier, Salinas
Carmel	Under county supervision
King City	Under county supervision
Monterey	Under county supervision
Pacific Grove	Under county supervision
Salinas	Miss Marie Fidel
Soledad	Under county supervision
Napa County	Dr. Robert S. Northrup, Napa
Calistoga	Mr. George C. Locey
Napa	C. C. Hackett, D. D. S.
St. Helena	Mr. C. C. Johnson
Nevada County	Dr. Carl P. Jones, Grass Valley
Grass Valley	Mr. E. M. Roesner
Nevada City	Mr. George H. Calanan
Orange County	Dr. K. H. Sutherland, Santa Ana
Anaheim	Under county supervision
Brea	Under county supervision
Fullerton	Under county supervision
Garden Grove	Under county supervision
Huntington Beach	Under county supervision
Laguna Beach	Under conuty supervision
La Habra	Under county supervision
Newport Beach	Under county supervision
Orange	Under county supervision
Placentia	Under conuty supervision
San Clemente	Under county supervision
Santa Ana	Under county supervision
Seal Beach	Under conuty supervision
Tustin	Under county supervision
Placer County	Dr. Theodore Snypp, Auburn
Auburn	Dr. Theodore Snypp
Colfax	Dr. R. C. Atkinson
Lincoln	Dr. A. McArthur
Rocklin	Under county supervision
Roseville	Dr. R. H. Eveleth
Plumas County	Dr. B. J. Lasswell, Quincy
Riverside County	Dr. W. B. Wells, Riverside
Banning	Mr. R. H. Samuel
Beaumont	Mr. W. J. Atkinson
Blythe	Dr. W. H. Chapman
Corona	Dr. W. S. Davis
Elsinore	Dr. S. J. Brimhall
Hemet	Mr. A. J. Berg
Indio	Dr. R. M. Gray
Perris	Dr. H. J. Wickman
Riverside	Dr. W. B. Wells
San Jacinto	Dr. W. L. Chilcott
Sacramento County	Dr. Hugh Beattie, Elk Grove
Isleton	Dr. J. H. Leimbach
North Sacramento	Dr. W. E. Weddle
Sacramento	Dr. Herbert F. True
San Benito County	Dr. L. C. Hull, Hollister
Hollister	Mr. Fred A. Earle
San Juan Bautista	Mr. E. Zanetta
San Bernardino County	Dr. E. B. Godfrey, San Bernardino
Barstow	Under county supervision
Chino	Dr. W. C. Miller
Colton	Dr. J. A. Champion
Needles	Dr. W. G. Morton
Ontario	Dr. C. L. Emmons
Redlands	Dr. Harold G. Gentry
Rialto	Dr. L. P. Barbour
San Bernardino	Dr. W. D. Lenker
Upland	Dr. John B. Craig
San Diego County	Dr. A. M. Lesem, San Diego
Chula Vista	Dr. F. E. Ashcroft

(Continued in Back Advertising Section, Page 34)


Will he have strong bones and teeth?

So much depends on his mother's diet during pregnancy and lactation

AT NO TIME is the need for a protective diet so great as during pregnancy and lactation. All elements required for the child's developing body must come from the mother's food—or from her own body.

Cocomalt has well proved its value during these two periods of special stress. For not only does it substantially increase the caloric intake; it provides extra proteins, carbohydrates, mineral nutrients (calcium and phosphorus) and vitamins. Prepared according to label directions, Cocomalt adds 70 per cent more food-energy to milk.

Rich in Vitamin D

Highly important to both mother and child is the rich Vitamin D content of this delicious chocolate flavor milk-drink. Cocomalt contains not less than 30 Steenbock (300 ADMA) units of Vitamin D per ounce (under license by Wisconsin University Alumni Research Foundation). Cocomalt comes in powder form, at grocery and drug stores in ½-lb. and 1-lb. vacuum-sealed cans. Also in 5-lb. cans for hospital use, at a special price.

ACCEPTED AMERICAN MEDICAL ASSN. Committee on Foods

NRA MEMBER U.S. WE DO OUR PART

Free to Physicians

We will be glad to send you a trial-size can of Cocomalt. Just mail coupon. R. B. Davis Co., Hoboken, N. J.

Cocomalt is accepted by the Committee on Foods of the American Medical Association

Cocomalt

DELICIOUS HOT OR COLD

Cocomalt is a scientific food concentrate of sucrose, skim milk, selected cocoa, barley malt extract, flavoring and added Vitamin D.

ADDS 70 PER CENT MORE FOOD-ENERGY TO MILK

(Prepared according to label directions)

R. B. DAVIS CO., Dept. BC-10, Hoboken, N. J.

Please send me a trial-size can of Cocomalt, free.

Dr. ....

Address ....

City .... *State* ....

When Steers Had Long Horns

THE medicinal value of the glands of internal secretion was not recognized.

But times have changed, as well as cattle. Now, the therapeutic value of certain gland products is definitely established and each year adds to our knowledge in this important field of therapeutics.

To the physician prescribing gland products we urge specification of "Wilson," because it connotes a product made at the source of supply from fresh glands, processed promptly, with the aim of conserving maximum hormone activity, in a laboratory devoted exclusively to the endocrine field.

"This mark **THE WILSON LABORATORIES** your guarantee"

4221 S. Western Boulevard
CHICAGO, ILL.

Manufacturers of

STANDARDIZED ANIMAL DERIVATIVES, LIGATURES and DIGESTIVE FERMENTS

*

ELI LILLY AND COMPANY

FOUNDED 1876

Makers of Medicinal Products

ILETIN (Insulin, Lilly) is a purified and highly refined preparation of low nitrogen content. It is particularly free from reaction-producing proteins, is stable and accurately tested, and has given excellent results for many years in thousands of cases of diabetes.

PROMPT ATTENTION GIVEN TO PHYSICIANS' INQUIRIES

ADDRESS ELI LILLY AND COMPANY, INDIANAPOLIS, INDIANA, U. S. A.

CALIFORNIA
AND
WESTERN MEDICINE

Owned and Published Monthly by the California Medical Association
Four Fifty Sutter, Room 2004, San Francisco
ACCREDITED REPRESENTATIVE OF THE CALIFORNIA AND NEVADA MEDICAL ASSOCIATIONS

VOLUME XXXIX OCTOBER, 1933 No. 4

CANCER—PRESENT TRENDS IN ITS TREATMENT*

By Arthur C. Christie, M. D.
Washington, D. C.

The past ten or twelve years have witnessed a remarkable change in the attitude of the medical profession toward cancer therapy. It is doubtful if any disease has ever created a wider or more intense interest than has cancer during the past decade. The success of the persistent campaigns to control pulmonary tuberculosis stimulated the American Society for the Control of Cancer, and similar organizations in other countries, to attempt a like campaign to inform the general population of the dangers of cancer, and of the possibilities of prevention and cure. The results of these efforts are not yet apparent. The problem is different, and in many respects much more difficult than that of the control of tuberculosis. The cause of cancer is not known, and the problems of diagnosis are exceedingly complicated. It is very doubtful if periodic health examinations, as they are usually performed, will be of any real value in the early recognition of cancer. It must be apparent that the diagnosis of cancer in its most common locations requires careful and expert inspection of the nose, mouth, throat, esophagus, stomach, colon, rectum, the lungs, kidneys, bladder, prostate, the thyroid gland, breasts, vagina, uterus and ovaries, and the entire skeletal system. The search must include not only the usual methods of physical examination, but the use of many laboratory methods and x-ray, as well as the services of several specialists. The value of an examination is very limited which must necessarily fail to recognize the presence of many early carcinomas. I would not attempt to minimize the value of periodic health examinations, but in the present state of our knowledge there is little possibility of their greatly reducing the incidence or improving the mortality statistics of cancer. The general publicity given to cancer has had, however, a good effect in inducing many patients to consult a physician earlier than they would have done otherwise, and in stimulating the medical profession to more careful examination for the presence of the disease. Although there are many cases of cancer which cannot be cured even if recognized early, nothing has been more thoroughly emphasized by experience than the fact that the chances of cure of cancer are in direct relation to earliness of diagnosis.

PROPHYLACTIC FIELD IN CANCER

The prophylactic field in cancer is still restricted and probably will remain so until we know the cause of the disease. There are several fields, however, in which preventive measures are of value. In gynecology, for instance, there are great preventive possibilities in the cure of inflammatory conditions of the uterus and cervix. The same is true in the mouth. The importance of the early and proper treatment of precancerous lesions is becoming increasingly recognized. These lesions include not only those of the skin, but such conditions as papilloma of the larynx, lower bowel and bladder, leukoplakia, and chronic indurative inflammatory processes in the breast and elsewhere. The physician who is alive to the possibilities of the development of cancer and to its dangers can do much in the way of prophylaxis.

CANCER'S PLACE IN THE STATISTICAL TABLES

Cancer has now come to occupy the second place in our statistical tables as a cause of death, with a rate of about 95 per 100,000. Statisticians inform us that this rate will probably rise to almost 125 per 100,000 when the disease becomes better recognized. It is not yet certain that cancer is really becoming more prevalent, although this is apparently so. A considerable part of the apparent increase is undoubtedly due to more accurate diagnosis, and part of it to the fact that a larger percentage of the population is now living to reach the cancer age than was true a few years ago. We need not labor the point, however, to emphasize the importance of a disease that occupies second place as a cause of death, and which ranks in this respect above both tuberculosis and pneumonia.

PRESENT POSITION AS REGARDS CANCER

Out of the experience and the tremendous amount of research of the past ten years a few facts have gradually crystallized. A proper appreciation of these facts will enable us to estimate our present position in the battle against malignant disease.

---

* Guest speaker paper, read before the Radiology Section of the California Medical Association at the sixty-second annual session, Del Monte, April 24-27, 1933.

The first of these is a frank recognition that there are many cases of cancer which, because of their location, extent, or type of the disease, are incurable by any method known to us today. I need only mention in this category such conditions as osteogenic sarcoma and cancer of the stomach, pancreas, or liver. The means of cure for these conditions and a large number of other malignant neoplasms are still unknown. We must recognize this, and not attempt the impossible with the means now at our disposal.

The second fact which is now recognized, and which must be courageously faced, is that surgery in malignant disease has reached the limit of its possibilities. Nothing stands out more clearly in a study of the past ten years' experience in treatment of cancer than the fact that the limits of operability in cancer are becoming more and more restricted. This is well illustrated by the facts now apparent with regard to surgical treatment of cancer of the breast. The first limitation is the age of the patient. It is well known that cancer of the breast in young women, even up to the age of forty, is a particularly deadly disease and that the percentage of cures is almost negligible. It is almost equally well recognized now that after sixty-five years of age cancer progresses slowly and the patient has a good chance of living out her full expectancy. In other words, it is not likely that the general average age of women over sixty-five with cancer of the breast is increased by radical surgery.

The other important limitation to surgical resection is the extent of the disease. It is becoming increasingly recognized that cancer of the breast has reached an inoperable stage when it is clinically demonstrable beyond the breast itself. There is nothing more discouraging than contemplation of the statistics of breast cancer in the hands of the best surgeons in the world when the operation has been performed after axillary nodes are palpable.

It is not only in cancer of the breast that the field of surgery is narrowing. Its application to malignant conditions about the tongue, mouth, throat, and neck has become greatly restricted; cancer of the uterine cervix can hardly be considered any longer in the surgical field; and cancer of the prostate offers no hope whatever of cure by surgical removal.

It is very important that these facts be recognized. Surgery has an important place in cancer therapy, and its value will be increased if its limitations are sharply laid down and adhered to.

RADIATION THERAPY

I come now to the only other method which has proved of value in the treatment of malignant neoplasms; that is, radiation by means of the x-ray and radium. In contrast to surgery during the past ten years, radiation has been gradually enlarging its field. The indications now are that this will continue for some time, but already its limitations are becoming apparent.

Early in the 1920's, under the leadership of German radiologists, extravagant claims were made for deep x-ray therapy in cancer. Many of the claims proved unjustified, but modification of the methods originated at that time has brought about important advances in radiation therapy.

Among these advances which are just now being recognized none seems more important than the time element in the application of radiation therapy. Many are now using some modification of Coutard's method, or a combination of that with Pfahler's saturation method, with improvement in the results of x-ray therapy. The improvement is thought to be due to the much greater dosage that can be applied without injury to normal structures. The time element is important in the repair of normal tissues. Along with this change in the time of application of the total dose the opinion is becoming quite general that greater filtration is also an advantage. We have been led to believe that increase in thickness of filter over that represented by one-half millimeter of copper serves only to decrease the total dose; but there is a very general impression among radiologists that the biological and clinical results do not support this dictum. We believe that we are witnessing improved results by the use of one millimeter of copper in our 200 kv. therapy over that secured when only one-half millimeter was used. We have been able to give a dose of 5000 r's with no permanent injury to the skin, and the apparent cure of lesions which had been intractable under other methods of treatment. The same principle has been extended to radium, so that now it is scarcely permissible to use interstitial radium applications with less than a millimeter of platinum filter, and some use routinely as much as two millimeters. There is no doubt that the results, both with regard to the malignant disease and conservation of the normal structures, are greatly improved by the increase in thickness of filter. Recent investigations by Failla and his associates seem also to indicate that further advantages may be expected by the use of shorter wave lengths obtained by voltages up to 750 kv. Certainly there is much now to lead us to believe that we can obtain a better relation between the destructive effect upon the malignant structure and the reparative process in the normal tissues by lengthening the time of delivery of the total dose and by increased filtration.

These improved methods have proved of great value in our own practice in treatment of malignant tumors of the nose, mouth, throat, neck, and larynx. We have seen particularly good results after doses varying from 2000 to 5000 r's in very difficult cases of malignancy involving the cartilages of the nose and ear.

INTERSTITIAL RADIATION

Another important advance during the past few years has been improvement in methods of interstitial radiation. The harmful effects of radon in glass seeds brought about the replacement by gold and platinum seeds. In many hands these have been in turn replaced to a large extent by the radium element in needles of various lengths of a least 1 millimeter of platinum thickness and with approximately .3 milligram of radium to the running centimeter. With such needles *in situ* for eight days, a dose can be secured of 100 milligram hours per 1 cubic centimeter of tissue.

It must be remembered that the technique of interstitial radiation is very exacting and that the method has distinct limitations. Experience has taught nothing more thoroughly than the fact that it is dangerous to traumatize cancerous tissue. The disease can be disseminated just as certainly by the traumatism produced by insertion of radium needles as by cutting through the tissue with a knife. Thorough irradiation by x-rays is just as essential before insertion of radium needles as is preoperative irradiation. I need not emphasize the importance of uniform dosage throughout the cancerous area by means of uniform implantation of the needles.

DANGER OF OVERTREATMENT

Another consideration I wish to bring to your attention is in the nature of a caution. Many cases of cancer are incurable at the time the physician is consulted. The temptation to overtreat such patients is just as strong in the radiologist as it is in the surgeon. Just as the surgeon must curb his desire to operate in such cases, the radiologist must refrain from harmful overtreatment. No good can come either to the patient or the method of treatment by radical treatment of cases in which only palliation is possible. For instance, in a woman past sixty-five years of age with cancer of the breast there should be the most careful consideration before interstitial radiation is resorted to. It is quite likely that the best results will be secured in such a case with the least harm to the patient by deep x-ray therapy alone.

It is incumbent on the surgeon and radiologist alike to recognize the limitations as well as the possibilities for good in the methods he is using.

PRESENT-DAY INVESTIGATIONS

At the present time a vast amount of research is being carried out in the hope of throwing light on the nature of cancer. Occasionally such work brings to light facts which can be directly applied to the problems of cancer treatment. For instance, the Aschheim-Zondek reaction has proved a very useful control in the treatment of teratoma testis. After removal of the primary growth roentgen therapy is continued until the reaction is negative even though there are no palpable glands or other evidence of the disease. Cures have been observed in the past after extensive metastases, and now that we have a method of early determination of recurrence, treatment may be applied much more intelligently.

The general situation in the field of cancer therapy is far from hopeless. It is not a cause for pessimism that we have come to recognize the limitations of some of our methods of treatment. Much good can be accomplished even in those fields in which we cannot hope to bring about a cure. At the present time, as your speaker sees it, improvement in the field of x-ray and radium therapy offers the best hope for progress.

1835 Eye Street, N. W., Washington, D. C.

PROCEDURES FOR IMMUNIZATION AGAINST COMMUNICABLE DISEASES*

By Edward B. Shaw, M. D.
San Francisco
Henry Dietrich, M. D.
Los Angeles
and
Thomas C. McCleave, M. D.
Oakland

Discussion *by W. P. Lucas, M. D., San Francisco; Clifford Sweet, M. D., Oakland; W. H. Kellogg, M. D., Berkeley.*

FOREWORD.—The following report on the specific prophylaxis of communicable disease is submitted to the section on pediatrics of the California State Medical Society by a committee, consisting of the authors, which was appointed for this purpose last year. This report has been revised in accordance with suggestions made by several members of the section, and also by several authorities outside the section's membership. These latter include Dr. Wilfred Kellogg, Dr. Karl Meyer, Dr. William H. Park and Dr. W. M. Dickie. To all who have aided, the committee wishes to express its gratitude.

It has been our hope that this report would constitute an outline for immunization to which all members of the section could subscribe, and which might serve as a guide throughout the state. The presentation has been confined to the essentials involved without reference to literature or the discussion of debatable points. Many questions are a matter of opinion, and they are stated as such without reference to contrary views. It is planned to revise the report annually, adding such refinements as seem desirable.

DIPHTHERIA

The advisability of diphtheria immunization is unquestionable: the disease is sufficiently widespread to constitute an ever present menace, and is attended, even with good treatment, with a mortality rate which is reducible only by immunization.

Age.—Children may be immunized from six months of age onward. Immunization should be routine at one year, and should be advocated up to adolescence. Adults should be immunized if they are exposed to any hazard of infection, as in the case of medical students, dentists, nurses, social workers, school teachers, public school workers, etc.

Material.—Toxoid should be employed for young children, who seldom manifest severe reactions from its use. In older children, above ten years of age, and in adults, toxoid frequently produces unpleasantly severe reactions, so that in these cases it is desirable to substitute toxin-antitoxin for toxoid, or to employ toxoid in doses which are initially, at least, smaller than those usually chosen.

---

* A report outlined for the Section on Pediatrics of the California Medical Association.

* Read before the Pediatrics Section of the California Medical Association at the sixty-second annual session, Del Monte, April 24-27, 1933.

Dose—Toxoid for Infants and Children Under Ten Years.—Routine immunization consists of three injections given two weeks apart. The initial dose is one-half cubic centimeter, second and third doses are each one cubic centimeter. A shorter interval is permissible if it is desired to hurry the procedure. Somewhat longer intervals than two weeks between injections are equally effective and do not increase the risk of reaction.

For Immunization Over Ten Years of Age.—In older patients the procedure employed should be *individualized*, depending on the reaction produced by an initial small dose of toxoid. The initial dose should be *one-tenth* cubic centimeter. In the majority of cases this produces no marked reaction, and can be followed at intervals of two weeks by doses of one-quarter, one-half and one cubic centimeter. If considerable reaction is produced about the site of any injection, succeeding doses should be cautiously increased. Immunity is usually produced by even such small doses as a series of one-tenth, two-tenths, two-tenths cubic centimeters; and in such cases, after an interval of from three to six months, the immunity may be determined by a Schick test, and in the event of failure, the course of injections should be repeated, with perhaps some increase of dosage.

It should be emphasized that the need for immunization is the greatest in small children, and with them special methods of procedure are seldom necessary. If toxoid is routinely employed at the age of one year, reactions are very rarely encountered and the routine method may be confidently followed.

Toxin-antitoxin Mixture.—This can be used instead of toxoid. It does not produce immunity, however, with as much certainty as toxoid. Three doses should be given at intervals of from one to two weeks in doses of 1.0 cubic centimeter. Toxin-antitoxin contains less protein than does toxoid, and thus does not produce as much reaction following injection; and it may therefore be substituted for toxoid in the case of older patients, if desired. Unlike toxoid, toxin-antitoxin contains small amounts of horse serum and introduces the possibility of horse serum sensitization. The amount of horse serum is so minute, however, as to introduce no danger of immediate reactions, even in the serum sensitive patients. New immunizing agents are being, and will be introduced, which it may be desirable to employ when their value has been demonstrated.

Schick Tests.—In most communities the susceptibility rate to diphtheria, under ten years of age, is sufficiently high that it is feasible to proceed with immunization without first performing a Schick test. This results in unnecessary injections of toxoid in a few cases, but saves time, obviates some errors, and does no harm. After the age of ten years, a high percentage of children have become naturally immune and it is preferable to determine the need for immunization by the performance of a Schick test before immunizing.

Schick tests should always be performed three to six months after immunizing injections are given to confirm immunity. The performance of this final test is the responsibility of the physician who carries out immunization, and it is not justifiable to assume protection simply because a high percentage are immune after toxoid injections. About 95 per cent of those receiving the recommended three doses of toxoid will be found to be immune at this subsequent test, but the five per cent not protected will enjoy a fallacious sense of security which may lead to dangerous errors should they be exposed to diphtheria, or develop the disease and possibly help bring immunization into disrepute.

Schick Test Material.—Most commercial laboratories supply toxin for tests contained as a minute quantity in a small vial, together with a second vial of normal saline which is used to dilute the toxin in proper concentration for the test. Dilutions must be made immediately before the material is used, for after the lapse of a few hours it cannot be relied upon. In one-tenth cubic centimeter of the diluted solution is contained 1/50 M. L. D. of toxin (sometimes 1/40 in 0.2).

In the performance of the test, one-tenth cubic centimeter of the diluted toxin is injected intracutaneously into the flexor surface of the forearm about one-third the distance below the elbow. It is important that the material be injected intracutaneously in such a way as to produce a very superficial bleb. The reaction from this test is purely local and consists of a small zone of inflammation produced by the toxin in case the patient's immunity is insufficient to neutralize it. This response appears after a latent period, and is usually marked at forty-eight hours; but in some cases it develops at sixty to seventy hours, often increases for several days thereafter, and gradually fades, leaving an area of desquamation and sometimes pigmentation afterward.

Schick Test Control.—Certain individuals react locally to constituents of the test solution other than the toxin. This has no relation to immunity and is commonly encountered in those above the early age group. Such reactions introduce possible sources of error into the test and render it imperative that a control solution be employed which contains all the constituents of the test solution except the toxin.

The control solution consists of diluted toxin which has been heated to 75 degrees to 80 degrees centigrade for from five to ten minutes. Heating renders the toxin inert. Control solutions need not be freshly diluted and are furnished on request, ready diluted for use, by most commercial houses. It is quite easy to improvise a control by diluting the test material, dividing it into two portions, using half for the tests and heating the rest to 80 degrees centigrade for ten minutes and using this as control. The control solution is preferably injected into the opposite arm in a similar manner and at a site similar to that in which the test solution was injected. In general the reaction produced by the control is characterized by less redness and induration than the toxin, reaches its height more quickly, subsides faster, and is attended by less irritation, desquamation and pigmentation. Nevertheless, reactions due to substances other than the toxin produce reactions of such sufficient degree as to make accurate Schicks impossible unless a control is used.

Reading Schicks.—Tests should be inspected seventy-two hours after their application and in case of doubt, as when marked reactions occur from the control, should be inspected a week after performance. Rarely an uncomplicated positive reaction is delayed four days in its appearance. Four types of response are encountered:

1. No reaction about either injection.	Patient immune
2. Equal reactions about both injections. (The patient reacts only to constituents other than toxin.)	
3. Reaction about the toxin injection, none about the control. The patient reacts to toxin, but not to other constituents.	Patient not immune
4. Reaction about toxin injection, which is perceptibly greater than one also present about control. The patient reacts to toxin and also to other constituents.	

Accuracy of interpreting Schick tests improves with experience, but the procedure is not difficult. The test (or a Kellogg test, see below) is essential to proper performance of immunization. Greater accuracy is secured if a number of tests are performed at one time, since by comparison of the response in different individuals with the same solution different degrees of response may be evaluated. Furthermore, since many packages of Schick toxin, owing to its instability, are inert by the time they reach the physician, the danger of false negatives from this cause may be obviated by the control secured in treating a number at one time. It should be recognized, however, that when all patients being tested have been recently immunized, this control value of numbers is considerably lessened. In cases of doubt the test should be called positive (no immunity). If the test indicates lack of immunity, toxoid injections should be repeated, or if these are refused, the patient should be told that he is not immune. If a patient has a positive Schick test following attempted immunization it is not justifiable to assume that any degree of partial immunity exists which will serve to protect from severe diphtheria. Deaths from diphtheria have occurred under just these circumstances.

The necessity for Schick testing as a final step in the production of immunity is stressed because of the fact that in mass immunization it is often assumed that universal administration of toxoid will result in so nearly complete protection of a group that the small residue of nonimmunes can be ignored. This permits a group to exist in which immunity is assumed, but is not actually present. Diphtheria immunization should not be delegated by the physician to public health authorities. It should be the responsibility of every practicing physician to advocate strongly that all children under his care be immunized, and he should attempt to see that proper procedures are carried out by himself, by a colleague or, if economic factors indicate, by a clinic. It is highly advantageous from the standpoint of both physician and patient that the latter's medical record contain information regarding immunization and subsequent Schick reaction. It cannot be regarded as desirable that children be immunized in groups under conditions which do not permit accurate data to be kept for their benefit at some future time. It is felt to be the duty of school health, or public health authorities who undertake immunization to confirm the presence of immunity by Schick or Kellogg tests.

Kellogg Test.—This test, developed by Dr. Wilfred Kellogg, may be used as a substitute for the Schick test. This is a test, performed upon laboratory animals, for antitoxin content of the patient's blood. The test is performed in Doctor Kellogg's laboratory upon request, and the submission of a few drops of the patient's blood. Reports are returned that the patient is immune or not immune to diphtheria. Kellogg tests will not always exactly parallel Schick reactions for various reasons, chief of which is that, although the patient's blood may contain less than the amount of antitoxin which is taken as indicating immunity (1/30 unit of antitoxin per cubic centimeter), he may have a negative Schick test and be actually immune. This is because he has the capacity of quickly mobilizing antitoxin in response to the injection of even so small an amount of toxin as that contained in the Schick test dose. Similarly, such a person will be found to react to this small stimulus by giving an immune response to the Kellogg test within forty-eight hours. Discrepancies are not particularly troublesome, however, because this latent immunity, marked by a negative Schick and positive Kellogg, occurs only in a limited percentage of older children and adults; and if a Kellogg test is returned as "immune" after immunization, this is satisfactory evidence of immunization. The test is especially valuable when small numbers of children are to be tested, and when it is necessary to test them one at a time.

Ready Diluted Schick Toxin.—This toxin in the form of a stable dilution in peptone solution is now furnished by many commercial laboratories. This new diluent is still in the experimental stage and therefore cannot be recommended for routine use. Like the Kellogg test, it is of especial usefulness when only one or two children are to be tested at a time. The material is supplied already diluted for use, and the dilution is stable over a period of months. With this material, reactions due to protein substances other than toxin are somewhat commoner and more difficult of interpretation. It is particularly important that in this test a control solution be used which employs toxin *in the same diluent* which has been heated 75 degrees to 80 degrees centigrade for five to ten minutes. It is obviously incorrect to use as a control the heated solution of toxin in saline which is used for the ordinary Schick test.

The interpretation of Schick tests performed with this solution requires somewhat more experience than the ordinary method; and, as stated above, it is not advocated for routine use at present. Reactions should be first inspected forty-eight hours after injection rather than at seventy-two hours.

Refractory Group.—A small percentage of individuals are refractory to immunization. Such cases may fail to develop immunity after several courses of immunizing injections. Immunizing procedures must be individualized for these, and they may be tried on several series of varying dosage, using toxoid and toxin-antitoxin. It may be impossible finally to immunize them. No reliance can be placed in a hypothesis that they are protected by a partial immunity, and they should be told that they are susceptible.

Duration of Immunity.—When immunity has been artificially produced and demonstrated by a Schick test, it is justifiable to assume that protection will last for several years; it probably usually lasts for life and will at least serve to protect the child through the early years of greatest susceptibility and highest mortality. The method does not interfere with the development of natural immunity which, with the passage of time, serves to enhance the immunity.

Prophylactic Use of Diphtheria Antitoxin.—This is seldom to be advised. It is much better policy to isolate cases of the disease from all contacts, determine the susceptibility of contacts by Schick tests and promptly culture the throats of all contacts. Generally speaking, it is just as efficacious under these conditions to administer antitoxin at the first symptom of the disease as it is to give antitoxin prophylactically to everyone exposed. The disadvantage of antitoxin for prophylaxis is that it commonly produces the unpleasant symptoms of serum disease and results in immunity for only a short and variable period of not more than three weeks. This use of antitoxin sometimes leads to a false sense of security, in that if exposure continues longer than the period of protection conferred by antitoxin, the disease may develop. The chief use of antitoxin for this purpose is in families where economic and social conditions make it impossible properly to isolate cases and observe contacts. Under these circumstances antitoxin may be administered with some increase in safety but must not be relied upon for too long a time.

Upon determining the advisability of administering antitoxin, the usual precautions regarding horse serum injections should be observed. A careful search of the history should be made for factors which suggest the probability of reactions. Especially significant in this respect are the following: (1) A history of horse asthma or of similar response to horse emanations. (2) A history of reaction to previous serum injections. (3) Previous injections of horse serum may be productive of hypersensitiveness but do not always do so. Repeated injections of small amounts of serum, as is the case in toxin-antitoxin administration, is especially apt to sensitize. (4) An allergic history, attacks of asthma, hay fever, eczema, hives, etc., should be regarded as suspicious.

When the history reveals any suspicious items, the patient should be tested for cutaneous hypersensitiveness. Such tests are a wholesome routine in any case even when there is no particular reason to susceptibility. This test consists of the introduction of one-tenth cubic centimeter of a 1-10 dilution of the antitoxin in saline intracutaneously. Cutaneous hypersensitiveness, which *usually* accompanies general hypersensitiveness, is indicated by the appearance of a wheal, surrounded by a zone of erythema, which appears in five to thirty minutes. The amount of reaction is roughly proportionate to the degree of hypersensitiveness.

In the presence of suspicious history or a positive skin reaction the patient should be given an initially small dose of serum subcutaneously which in marked cases should be diluted 1-100 or in extreme cases 1-1000 with saline. Judging by the amount of local reaction, subsequent doses given at intervals of from thirty to forty minutes should be increased until the full dose is given. It may prove feasible to give the dose in two injections, or it may seem advisable to give several small doses before the final full dose. It must be admitted that the danger of reaction is not great, and some clinicians dispense with all such precautions. Desensitization does not prevent the occurrence of later serum disease.

The prophylactic dose should always be given subcutaneously, as this is somewhat safer and permits longer retention of the serum in the patient.

All horse serum should be given into an extremity in such a location that rapid absorption can be impeded, if an immediate reaction ensues, by the application of a tourniquet proximal to the site of injection. *Epinephrin solution,* 1-1000 *should always be in readiness* for immediate use if a reaction occurs and should be used in such dosage as to produce a definite physiological effect, blanching of the lips, etc.

Late Reaction.—Serum disease very commonly occurs after antitoxin is given. This occurs at from three days to one, two or three weeks after the injection. It cannot be prevented by any precautions at the time of injection. Patients should be told of the probability of its occurrence. The urticaria, glandular and joint swellings, etc., which characterize late serum disease are treated by local soothing applications and by the use of epinephrin solution intramuscularly.

SCARLET FEVER

Immunization with toxin of the scarlet fever streptococcus as a means of protection against scarlet fever has been proposed and to a considerable degree carried out. There is as yet, however, no absolute unanimity of opinion regarding the dosage of toxin, the degree and duration of immunity produced. In fact it can be confidently stated that scarlet fever immunization is not the answer to the scarlet fever problem to a degree in any way comparable to the case of diphtheria immunization. The situation is further clarified in California by the fact that the prevalent scarlet fever is not of great severity, nor have epidemics in recent years constituted a very great problem.

It seems proper to advise that scarlet fever immunization be not advocated as general routine at this time. It should be emphatically stated that unless any immunization procedure for general use can be defended on the grounds of *harmlessness, effectiveness* and *necessity* its use should be limited to experimental studies or to the individual case in which it may seem particularly advisable. It should be remembered that a campaign of prophylaxis which cannot be defended on these grounds would tend to discredit other procedures of proven great value. (Immunization of staff and personnel is carried on in some communicable disease hospitals which select their own procedure.)

Prophylactic use of scarlet fever antiserum is not particularly to be advised inasmuch as serum reactions seem commonly to be disturbing, and the duration and effectiveness of immunity produced is not even as satisfactory as in the case of diphtheria. In consideration of the low communicability of scarlet fever, isolation is the best prophylaxis; and in cases where protection is of momentous importance, the blood of a recent convalescent is to be thought of.

TYPHOID FEVER

In most urban communities in California, and in many rural ones, the risk of acquiring typhoid through an infected water supply is practically nil. Most cases are produced by healthy carriers of infection who chance to infect food supplies. Statistically the risk of typhoid infection may be shown to be very slight in this state. It therefore seems wise to advocate that typhoid immunization should not be recommended for universal application, but that its use be restricted to those whose work brings them in contact with infected cases; for example, doctors and nurses, or those who are to travel in a region in which the risk of typhoid is appreciably increased. It should be particularly advised for those contemplating European or Oriental travel.

Method.—Immunization against typhoid fever may be carried out singly or in combination with the A and B paratyphoid organisms. The latter procedure would seem to be preferable, since the risk from other enteric infections is proportionate to that of typhoid. The bacterial vaccine used for immunization consists of a suspension of heat-killed or chemically-killed typhoid and paratyphoid organisms. The usual mixture contains 500,000,000 typhoid bacilli and 250,000,000 each of the Para A and Para B organisms per cubic centimeter. The vaccine injections should preferably be given at intervals of one week, the first dose consisting of one-half cubic centimeter, and the second and third doses consisting of one cubic centimeter each. It is possible to hurry the procedure by giving injections five days apart, but the week interval is preferable. Similarly it is permissible to give injections at slightly longer intervals than a week, and no adverse effect is produced if injections are given two or three weeks apart.

Dosage for children should be slightly reduced but need not be reduced in direct proportion to age, as young children tolerate relatively larger doses of vaccine well.

Duration of Immunity.—The duration of typhoid immunity after typhoid immunization is uncertain and cannot be tested by any laboratory procedure; it should be repeated after an interval of two or three years, if it is to be relied upon.

WHOOPING COUGH

Whooping cough is a communicable disease, the seriousness of which is frequently not appreciated. It commonly results in seriously impaired nutrition, its immediate complications are of great seriousness, and it lets down the bars for continued chronic infections which may follow in its wake. It is most serious in younger individuals, and susceptibility is present from birth onward.

Vaccine.—The only attempt at the production of specific immunity in this disease is by means of whooping cough vaccine. The value of this agent is still uncertain, and its protective and therapeutic value is difficult to prove. There are, however, a few observations which point so convincingly to the value of this procedure, in certain well controlled experiments, that, because of the seriousness of the disease and the fact that we have at our command no other agent for specific immunization, the use of vaccine may be recommended. It should be proposed, however, only as the best but still unsatisfactory method of prevention of a very serious disease.

Whooping cough vaccine consists of a suspension of B. pertussis in normal salt solution killed by heat or chemicals. The suspension is usually a heavy one containing from five to ten billion organisms per cubic centimeter, and such vaccines are commonly preferred to weaker ones. There is some evidence to show that freshly prepared vaccines have greater immunizing value. The vaccine is usually given at intervals of from two to four days. Successive doses consist of 0.25 0.5, 1.0 and 1.5 cubic centimeters. In case a reaction is produced, the dose is diminished or not increased at the next injection.

Many types of vaccine are in the process of development and their introduction may be awaited with interest. There can be little doubt that vaccines produced from freshly isolated clinical stains grown on human blood media have distinct antigenic advantages.

Indications.—The immunity produced by vaccination is of uncertain duration, and prophylactic immunization should therefore be restricted to those who are known to have been exposed.

Treatment.—The treatment of whooping cough in its early stages may be undertaken by the use of pertussis vaccine in a manner similar to prophylactic vaccination.

Reactions.—As a general rule little reaction is produced by injections of whooping cough vaccine. Occasionally, however, the vaccine contains a large amount of blood which has been washed from the media, upon which the organisms are grown, and this will occasionally be productive of reactions in the sensitive individual. It is advantageous on this account to select a vaccine which contains little or no blood.

MEASLES

There exists no method for active protection against measles. The disease may be prevented by passive protection conferred by an injection of blood serum of a recent convalescent from the disease, or by the injection of the blood or blood serum of most adults (who have had the disease earlier in life).

Convalescent Serum.—Human blood serum taken one to three weeks after the fever has subsided in an attack of measles contains very powerful protective substances against the disease. Such blood may be withdrawn, the serum separated aseptically from the clot and stored in sterile containers, with or without the addition of a preservative at ice-box temperature, for a period of several months. Pooling serum is advantageous. If such serum is given immediately following exposure even in relatively small doses subcutaneously, it will usually completely protect against the disease or greatly lessen its severity. If similar doses are given five to six days after exposure, partial protection is produced and the patient develops measles, which is usually of a very mild form, accompanied by little or no fever, an atypical rash and mild respiratory symptoms. As the interval after exposure increases larger doses are necessary to produce any protection, and after the seventh day following exposure attenuation of the disease is usually not demonstrated with the use of comparatively large amounts of serum.

In most children results are secured by using three to seven (usually five) cubic centimeters of serum for the first to fifth day following exposure, or by using ten to fifteen cubic centimeters on the fifth to seventh day inclusive. After the seventh day little can be expected even with much larger doses.

Adult Blood.—Most adults have had measles at some period in their life and the blood of most of these contains substances capable of exerting a protective power similar to that afforded by the serum of a recent convalescent. It was thus suggested, as a convenient method for protection of children following exposure, that the blood of either parent or of children several years after attack might be injected. For this purpose the blood is drawn aseptically (small amounts of sterile sodium citrate solution may preferably be introduced into the syringe to facilitate handling and absorption of the blood) and the whole blood is injected intramuscularly into the patient whom it is desired to protect. Immune substances are only presumptively present, as the amount of circulating antibodies varies greatly in those who have previously had the disease. Somewhat larger amounts of this "normal" blood must be used in order to secure the effect of convalescent serum. It is usually more convenient to inject the whole blood than to carry out the procedure necessary for the separation of serum. When the blood of a parent is used for protection, it is usually possible to judge whether or not it is safe to inject this without a preliminary Wassermann test. From twenty to forty cubic centimeters of "normal" whole blood produces effects comparable to the smaller doses of convalescent serum. It is sometimes forgotten that children who have had a transfusion in the course of an acute infection (mastoiditis, etc.) are usually protected if exposure to measles ensues in less than three weeks.

Utility.—Prophylaxis against measles is not to be recommended in every child who has been exposed. The protection conferred is not of long duration; the duration of protection is, however, distinctly longer than that conferred by prophylactic injections of animal antiserums which are excreted in a period of two or three weeks. The antibodies contained in human blood serum have been shown to persist as long as six weeks or more after injection, but three weeks after injection modification rather than prevention is to be expected.

It should be remembered that measles practically does not occur in children under six months of age. Complete protection may be sought in the case of infants of from six months to two years of age, or in those suffering from other forms of illness, especially tuberculosis and other respiratory infections, and in those whose physical condition makes it desirable to postpone an attack. The method finds especial usefulness in institutions into which the disease has been introduced.

Immunity After Modified Measles.—It seems logical to expect that if convalescent serum or adult blood were given after exposure, at such a time and in such dosage that modified measles resulted, that the patient would remain permanently immune to the disease. Actual proof of this is lacking, however, and it is hardly safe to assure the patient of such immunity on purely theoretical grounds.

SMALLPOX VACCINATION

Vaccination against smallpox should be advocated for every child at an early age. During epidemics of the disease it may be carried out at any age, but as a general routine it should be done at from six to twelve months of age. Vaccination at the first birthday may be adopted as a safe rule.

By vaccination, early protection is conferred on the young, and it is particularly noteworthy that certain dangers incident to vaccination are minimal in the very young.

Simultaneous Administration of Toxoid and Vaccination.—It is perfectly feasible to combine the procedures of immunization against smallpox and diphtheria. This saves time and extra trips to the doctor's office, introduces no added hazard, and at least hypothetically may decrease the risk of vaccinal complications.

The following routine is convenient at one year of age:

First visit	Vaccination	½ c.c. toxoid
1 week later	Dress vaccination	....
1 week later	Dress vaccination	1 c.c. toxoid
2 weeks later	Inspect vaccination and make appointment for Schick test	1 c.c. toxoid
6 months later		Schick test

Material.—Any commercial glycerinated vaccine is used. A record should be kept of the lot number of the vaccine.

Location.—Vaccination is more safely done on the arm. The preferable site is the inner aspect of the arm at the junction of the lower and middle thirds. Here the pustule is protected from trauma, and resultant scars are inconspicuous.

Leg vaccinations should be discouraged; they uniformly cause more trouble. Secondary infections are somewhat more common, and they are rendered more hazardous by the fact that muscular movements of the leg are harder to prevent and result in more risk of the dissemination of pyogenic infection.

Preparation.—The site should be thoroughly washed with soap and water, scrubbed with 95 per cent alcohol, and quickly dried with ether.

Multiple Pressure Method.—A drop of virus is placed in the center of the cleansed area; then, holding a small sterile needle parallel to the skin surface, the needle is quickly stroked against the skin through the drop of virus. About ten to fifteen strokes are enough. The excess of virus may be wiped off with sterile gauze.

It is important, in the prevention of all adverse effects of vaccination, that the vaccine virus be applied to a very small scarification. Instead of using the multiple pressure method, a minute scratch not over one-eighth inch long may be made with a needle. A scarification one-eighth inch in diameter may be made with a chisel as an alternative. It is never permissible to apply any species of cross-hatching with the needle, nor to make a large area of scarification in any manner. Multiple vaccinations are unnecessary and undesirable.

Dressings.—It is permissible to apply no dressing. Tight, constricting dressings, shields, etc., should be sedulously avoided: two or three thicknesses of sterile gauze may be placed over the site and lightly affixed with adhesive in such a way that no constriction of the arm is produced. This serves to prevent scratching and contamination with fingers and clothing, and is advisable.

Inspection.—First vaccinations should be inspected after one week, at which failures or successful "takes" are noted. Failures should be promptly revaccinated. There is, of course, no protection from vaccination unless there is an evident "take." It is nearly always possible to produce successful vaccinations, even if several trials are necessitated. Failures are nearly always occasioned by inert virus and this loss of potency is usually due to storage at improper temperatures. At the first inspection the pustule is cleansed with ether, and may desirably be painted with one of the mildly antiseptic dyes (Berwick's dye, gentian violet, or mercurochrome), to minimize secondary pyogenic infection. Healing is nearly complete two weeks after vaccination.

Revaccination.—Children vaccinated at one year should be revaccinated when they enter school. Vaccination should be repeated during epidemics in those who have not been successfully vaccinated within three years. Revaccination should be repeated at similar periods, if the danger of smallpox is for any reason increased—as by Oriental travel.

Revaccinations should be inspected after an interval of forty-eight hours for evidence of an immunity response. This consists of a reddened and, usually, an inflamed papule at the vaccination site, which reaches its height in from forty-eight to seventy-two hours, itches greatly and has largely subsided at the end of a week. This is evidence of immunity.

POLIOMYELITIS

The use of convalescent serum or of "normal" (immune?) serum has been proposed for passive protection against poliomyelitis during epidemics. This is not, in general, to be recommended. The utility of this method is doubtful and hard to evaluate, the risk of acquiring the disease is statistically small, and available serum, which is hard to procure, should be reserved for treatment of early cases where results may be studied and evaluated.

MENINGITIS

No method or passive protection can be advocated for this disease. Vaccines are of doubtful value, and it is difficult to control their specificity. Antimeningococcus horse serum should not be given for passive protection.

MUMPS—CHICKENPOX

Blood serum from recent convalescents may be given for protection against these infections where there is need of prophylaxis. This necessity is uncommon because of the mildness of infection, and it is practically limited to institutions.

TETANUS

Tetanus Antitoxin should be used prophylactically in all cases in which there is danger of contamination of a wound with horse manure or with human excreta. It is particularly indicated in puncture wounds—those about the head and those in which there is pyogenic infection or much necrotic tissue. When tetanus antitoxin is thought to be advisable, the same precaution employed in the prophylactic administration of diphtheria antitoxin is to be observed with regard to history, test and method. Prophylactic dose is 1500 units and should be given *subcutaneously*.

Like any foreign protein, tetanus antitoxin is eliminated from the patient's body in two or three weeks; and therefore because of the frequency with which the incubation period of tetanus is prolonged, serum must be repeated at the end of this time if protection is to be relied upon. The repetition of serum is particularly desirable if there is pyogenic infection or if operative procedures are to be carried out in the infected area even after a long period of time. Antitoxin should be repeated with especial observance of the initial precautions, but undue apprehension regarding reactions is not justified.

384 Post Street.

DISCUSSION

William Palmer Lucas, M. D. (490 Post Street, San Francisco.)—I feel that this carefully detailed report on specific prophylaxis is especially timely and will be heartily welcomed by the profession. It is conservative, practical and up to date on method.

The discussion on diphtheria immunization for older patients should be noted, since reactions from toxoid are fairly common in adolescents and young adults.

The importance of technique in doing Schick tests should be stressed to insure accurate information on results. Cases with repeatedly positive Schicks should be studied individually.

Every practitioner in the state should make vaccination and immunization of every child he sees a routine measure.

⁂

Clifford Sweet, M. D. (242 Moss Avenue, Oakland).—I have but little to add to the above recommendations in the way of discussion. I was present when they were discussed in the Pediatric Section at the last meeting of the California Medical Association and made some suggestions at that time. I most heartily commend the carrying out of these methods by every physician who treats children as patients. The immunization of all children at one year of age against diphtheria is of very great importance, and the number who are protected in this manner will increase in proportion to the number of physicians who, with conviction and enthusiasm, advise that it be done. Every child who is immunized should be subjected to the Schick or Kellogg test afterward. The nonimmune child, who lives and plays with immune companions who may at any time become carriers, is in greater danger than he would be in a group of nonimmune children.

Smallpox vaccination may be done before six months of age with even less likelihood of reaction than at one year. There are no disadvantages connected with doing it at the earlier age.

⁂

W. H. Kellogg, M. D. (Bureau of Laboratories, Berkeley).—The article on Immunization Procedures by Doctors Shaw, Dietrich and McCleave which has been given the stamp of approval by the section on pedriatics of the California Medical Association is an authoritative discussion of the immunization procedures that form such an important part of the practice of preventive medicine.

The practice of medicine may theoretically be segregated under two main headings—curative medicine and preventive medicine. Such a division is necessary in the allocation of appropriate duties to the public health officer, but no such distinction should be made by the general practitioner. His field includes all, except, of course, the enforcement of the laws which especially charge the health officer with duties of quarantine and other mass measures. It is not only the privilege, it is the duty of doctors to practice preventive medicine to the full extent made possible by the personal relationship existing between physician and patient. The degree to which the general practitioner accepts this responsibility and avails himself of his opportunities in this field will be the measure of the assumption of activities by official health departments beyond the basic essentials of public health.

In many communities the doctor is not doing his part, and the official agencies are not only encouraged, but they are obliged to engage in activities for the public good that should form a pleasant and lucrative division of general practice. The reason for this situation is an all too prevalent lethargy with respect to progress in the field of prevention, with perhaps a tincture of false dignity with respect to perfectly proper "go getter" methods in building up a preventive practice.

The most common shortcomings of the general practitioner with respect to immunization may be summed up as follows:

1. A tendency to consider it unimportant as a division of practice.
2. To consider it unimportant to the individual; he can receive protection when epidemics threaten.
3. Neglect in keeping informed on the progress of immunology, as a consequence of which faulty advice is given and antiquated methods used.
4. An inertia that leaves this field to the public health officer with perhaps at the same time a feeling that the health officer is overstepping the bounds of his appropriate activities.

This article should go far toward arousing interest in specific prevention, and will be of the utmost value in providing in condensed form authoritative information regarding methods and the usefulness and limitations of biologic procedures in the practice of medicine. It is to be hoped that the article will be reprinted and given wide circulation.

COLD QUARTZ ULTRAVIOLET LIGHT THERAPY IN UROLOGY*

By J. C. Negley, M. D.

Los Angeles

Research into ultraviolet energy has shown therapeutic properties reside in a form of radiation whose penetration is slight. Sources[1,2] are the sun, carbon arc lamps, cold quartz mercury vapor lamps, incandescent bulbs, Edison carbon filament, tungsten bulb, gas bulb, magnetite arc, water-cooled and air-cooled lamps.

To physicians devoting their entire time to tuberculosis or skin diseases, we owe most of the technique and enthusiasm over ultraviolet light therapy. Obviously, apparatus suitable for body irradiation could not be well used in organs of the genito-urinary system. Within a comparatively recent time, apparatus has been devised making direct or indirect treatment of these organs possible.

PHYSICAL CHARACTERISTICS

As with radium and roentgen ray, ultraviolet light is part of the spectrum of radiant energy comprising that portion of the spectrum with wave lengths approximately between 1000 and 4000 A. u. This is situated next to the violet zone. The ultraviolet spectrum from a quartz lamp consists of wave lengths between 3800 and 2000 A. u., and further divided into near ultraviolet from 3000 to 4000 A. u., and the far ultraviolet from 2000 to 3000 A. u.—the near rays having comparatively greater penetration, and the far rays less penetration but more biologic potency. Also, the shorter wave lengths exert specific photochemical action. In a physical sense, longer wave lengths produce molecular vibration and heat; shorter rays display an electronic action similar to that of roentgen rays, with resultant chemical and biologic reactions before the residual fraction of energy is transformed into heat. Living tissue is only affected by the portion of energy absorbed into it. Incident intensity of ultraviolet rays is greatest where they strike the surface at right angles. The amount reflected is increased in proportion as the incident ray assumes a direction less than 90 degrees. This loss by reflection is an important clinical consideration. The degree[3] of penetration of light of various wave lengths into mucous membranes is not definitely known, but recent investigations have proved these rays to be more penetrating than hitherto supposed. The positive and undeniable clinical results with ultraviolet irradiations cannot be reasonably explained, except on the assumption that they penetrate deeply enough to affect at least the capillary circulation. Transmission of light, regardless of color or wave length, is always accompanied by a certain amount of absorption which may be of two kinds: (1) General, which is almost the same for all wave lengths; (2) Selective, in which absorption of certain wave lengths is greater than that of others. Only the radiation that is absorbed can affect chemical change.

---

* Chairman's address, Urology Section of the California Medical Association. Read at the sixty-second annual session at Del Monte, April 24-27, 1933.

BIOLOGIC ACTION

After exposure to ultraviolet light manifold visible and invisible changes occur, their onset more or less related to intensity and length of exposure. Short exposures bring on an abnormal sensitivity, vasodilatation, hyperemia, slight edema, and stimulation of cell nutrition. Long exposures may bring on intensive inflammatory reaction, prolonged hyperemia, occasionally urticaria, marked edema, elevation of local temperature, and in some cases a definite burn.

Microscopic changes are manifest by vascular dilatation, congestion, edema, thickening of basement cells. Sensitiveness of cells to the ultraviolet energy is proportionate to their immaturity and differentiation. Apparently it is somewhat similar to roentgen rays and gamma rays in which young or undifferentiated cells are more susceptible than adult or highly differentiated ones. Bactericidal[4] power of ultraviolet is a recognized fact and roughly coincides with the absorption spectrum of bacteria. It has been found that the bacterial absorption sensitivity coincides closely with the curve of absorption sensitivity of egg albumin and human or animal serum. Only the light absorbed produces a chemical effect,[5] supposedly due to protoplasm coagulation similar to that produced by heat. Many views are expressed that the germicidal action extends from the short rays up to and including 3650 A. u., with the shortest rays having the most violent lethal action. It has been determined that ultraviolet is bactericidal to tubercle bacilli[6] after an exposure of from three to five minutes, from 5 to 10 inches from the burner. Tubercle bacilli[6] *in vitro* were completely sterilized by exposure of one to one and one-half hours by either a carbon arc lamp or mercury vapor lamp. These experiments were verified by guinea-pig tests. Theoretically, ultraviolet radiation kills all pathogenic organisms on the surface,[7] and the penetration of the longer wave lengths may be beneficial to the protective mechanism. There is, however, no direct evidence to show that organisms not on the surface can be affected by rays of wave lengths known to possess powerful bactericidal action. But even if the bactericidal action is clinically mild the inflammatory reaction resulting from the production of hyperemia is effective in curing infectious diseases. The therapeutic benefit of ultraviolet depends also on its influence on calcium, iron and phosphorus metabolism. The stimulating action of light on growth and development of plants and animals is of general cognizance.

GENERAL TECHNIQUE AND DOSAGE

Quantitative measurements of ultraviolet output from therapeutic apparatus lack uniformity and completeness. Many excellent reports from scientists are complicated and incomprehensible to clinicians and involve conditions and conclusions not encountered in practice. The commercial literature of the manufacturers of therapeutic lamps abounds in conflicting statements; and like many other kinds of physicians' equipment, therapeutic lamps are manufactured from a scientific and sales value standpoint rather than from a study of the needs of the clinicians using them. The sensitiveness of each patient to the action[8, 9] of the rays must govern our dosage. Individual toleration to ultraviolet light is variable. With the older types of therapeutic light, *i. e.*, the air-cooled and Kromayer or water-cooled light with their various applicators, no very rapid reactions were encountered, but with the advent of the newer mercury vapor lamps with orificial applicators the entire field has been opened again for this very valuable aid in the treatment of many conditions.

PROSTATE, VESICLES, AND BASE OF BLADDER

The technique for treatment of prostate, vesicles, and base of bladder is as follows:

1. Insert the quartz test-tube speculum in rectum.
2. Place orificial electrode within speculum and expose for twenty seconds.
3. Increase ten seconds daily until the manufacturer's limit of one and one-half minutes is reached. I have many times reached a limit of from three to five minutes, sometimes with pleasure, sometimes with regret and apprehension.
4. The number of treatments is limited only by the tolerance of the patient and the opportunities for their application.
5. Treatments should be discontinued under following conditions: burning in rectum, diarrhea, continuous desire to defecate or urinate, increased frequency in urination, pain (local or general), fever, malaise, nervousness, tachycardia or when any other signs of local or systemic reactions, real or fancied, occur.

The treatment of urethra in male or female consists in placing the orificial electrode within the urethra, beginning exposure with ten seconds and increasing ten seconds daily to one and one-half minutes, although longer periods may be used with caution.

The treatment of the vagina and cervix consists of use of quartz glass test-tube speculum with electrode within it; but in cases of pure cervicitis the bare electrode may be placed directly in the cervix, and the twenty seconds initial and ten seconds daily increase used to one and one-half minutes limit.

The treatment of surgical wounds and of surface conditions such as chancroids and ulcers can be done with so-called body lamp or by direct application of orificial electrode to wound or sinus. Begin with thirty seconds, increase ten seconds daily to three minutes.

The treatment directed to the interior of the bladder presents many obvious difficulties, as noted below:

1. On account of the rounded contour of a filled bladder it is obvious that the lamp must be at a varying distance from different points of the bladder, and this factor influences greatly the time of exposure and the intensity of the rays.

2. An empty bladder presents difficulties because of its many folds which might cover the involved area to such an extent that the rays would not reach the lesion. Direct contact with bladder walls might produce a burn.

3. Any chemical substance previously introduced for distention purposes may, under the influence of the rays, undergo enough chemical change to produce profound irritation. Substances such as eosin, neutroflavine, gentian violet, and others have been used to distend the bladder, with the assumption that their refractile properties increased the intensity of the light. This has later been disproved. Distilled water and air are now the media of choice, although urologists are aware of the danger of air distention.

TECHNIQUE FOR BLADDER TREATMENT IN WOMEN

1. The bladder is comfortably filled with sterile distilled water.

2. The orificial electrode is introduced through the urethra and placed as near the lesions as possible without actual visualization; with exposure for twenty seconds interval, this to be repeated daily with a ten-second increase until one and one-half minutes has been reached.

3. To protect the urethra with which the electrode is in direct contact, some clinicians coat over all but about the terminal two or three inches of the electrode with green to yellow lacquer.

4. Burning, tenesmus, urgency, frequency, dysuria, are a signal for discontinuation of treatments for a time.

REPORT ON CASES

As to actual use of this agent, some 2,345 treatments have been given to 197 patients who were suffering from the following pathologic conditions:

Bladder tuberculosis (women)	8
Prostate and vesicle tuberculosis	51
Prostate and vesicle (gonorrhea)	16
Prostate and vesicle (pyogenic infection)	11
Surgical wounds (tuberculous or pyogenic)	36
Urethritis (gonorrheal—men, 4; women, 14)	18
Urethritis (nonspecific—male)	11
Endocervicitis (gonorrheal or postgonorrheal)	10
Incontinence (in male after bladder-neck surgery)	4
Impotency	6
Chancroids, ulcers, incised abscesses, and surface lesions	26

The above patients were under my personal supervision at the Los Angeles General Hospital, Olive View Sanitarium, and in private practice. Some of these patients also had the usual treatments in addition to light therapy. Patients who receive less than seven treatments are not included. The greatest number of treatments in any one individual was 174, these being given for tuberculosis of prostate, vesicles and prostatic urethra, including the veru montanum.

COMMENT

From this rather small series of cases the following observations may be drawn:

1. Patients with urinary bladder tuberculosis are more rapidly relieved of distressing symptoms than by other methods. Ulcers, tubercles, and other lesions show marked improvement, but as yet I have observed no permanent cure.

2. Prostate and vesicle tuberculosis is markedly improved both as to symptoms and clinical pathological findings, but as yet I have observed no complete or permanent cures.

3. Prostate and vesicle pathology of a chronic indolent type, either from gonorrhea or pyogenic infection, are all benefited and in some cases completely and permanently cured.

4. Endocervicitis, either gonorrheal or postgonorrheal, is so markedly benefited that in many patients other forms of treatment may be dispensed with.

5. Slow-healing surgical wounds, whether tuberculous or otherwise, are so benefited that recovery time is decreased by 65 or 70 per cent.

6. Chancroids, ulcers, incised abscesses, buboes, and other surface lesions of external genitals respond so quickly and permanently that other forms of treatment might be dispensed with if it were not for the comfort derived from wet dressings.

UNFAVORABLE CASES

1. Acute urethritis from gonorrhea or other infections in men do not respond well, and in many cases if this light therapy is used, are aggravated to an alarming degree, as evidenced by phimosis, edema, and possible abscess. In all fairness to the method, my opinion is that many of these distressing results are due to the trauma incident to the introduction of the cumbersome, awkward, unwieldy urethral electrodes with which we are now supplied.

2. Acute fulminating inflammatory or abscess processes in the prostate, vesicles or elsewhere, which have not had drainage established by natural channels or surgery, had better be treated by other methods. Two cases of serious aggravation of prostatitis, with subsequent fibrosis sufficient to interfere with urination (I believe permanently), have led me to this observation.

3. Incontinence following surgery of bladder-neck obstruction are conditions which do not seem to be materially influenced for better or worse, regardless of the number of treatments.

4. Impotency from any cause does not seem materially benefited from local treatment.

5. Application of this method to diagnosed or undiagnosed malignancy may lead to more rapid growth and to an increase in the degree of malignancy.

6. Treatment of the posterior urethra and bladder, with the glass electrodes now furnished, is for obvious reasons fraught with danger.

7. Soft infiltrations, keloid-like formations, fibrosis and burns may follow overexposure.

CONCLUSIONS

1. Cold quartz ultraviolet light therapy in urology is not a "cure-all"; is not a panacea or an answer to the urologist's prayers, but is a useful, valuable adjunct to our present methods of treatment.

2. Only by intelligent application and observation of a large number of cases by many workers can the true value of this method be ascertained.

3. The author of this paper has now in contemplation apparatus that will enable us to safely treat the interior of the male bladder; also apparatus by which the ureter, kidney pelvis and calyces may be safely treated.

4. Preliminary ultraviolet irradiation of medicinal substances (inorganic preferably, such as mineral oil), and then injection of this substance into the inflamed bladder, offers a possibility of therapeutic results.

527 West Seventh Street.

REFERENCES

1. Coblentz, W. W.: Sources of Ultraviolet Radiation and Their Physical Characteristics, J. A. M. A., 92:1834-37 (June 1), 1929.

2. Coblentz, W. W., Long, M. B., and Kahler, H.: Decrease in Ultraviolet and Total Radiation with Usage of Quartz Mercury Vapor Lamps. Scientific papers of Bureau of Standards Bulletin, 15:6, 1928.

3. Anderson, W. T., Macht, D. I., and Bell, F. K.: General Action of Irradiation of Mucous Membrane with Ultraviolet Light, Abstract J. A. M. A., 84:1160 (April 11), 1925; The Penetration of Ultraviolet Light into Animal Tissues, J. A. M. A., 90:161-165 (Jan. 21), 1928.

4. Bayne, Jones and Linden, J. S.: Bactericidal Action of Ultraviolet Light, Bull. Johns Hopkins Hosp., 34:11-16 (Jan.), 1923. Burge, W. E.: Germicidal Action of Ultraviolet Radiation and Its Correlation with Selective Absorption, Arch. Radiol, and Electroth., 23:85-90, 1919.

5. Goodman, H.: Action of Ultraviolet Irradiation on the Bactericidal Property of the Blood, J. A. M. A., 90:280-284 (Jan. 28), 1928.

6. Kosan, Friedland: Bactericidal Effect of Ultraviolet Light on the Tubercle Bacilli, Brit. M. J., 2:160, 161 (July 30), 1927; Action of Ultraviolet Light on Tubercle Bacilli, Am. Rev. Tuberc., 13:470-474 (May) 1926, and Am. Rev. Tuberc. 10:166-169, 1924.

7. Pohle, E. A., and Hafford, W. S.: Standardization of Ultraviolet Rays, J. A. M. A., 86:818-820 (March 20), 1926.

8. Loundsberry, Ray C.: Histologic Changes in Organs Following Ultraviolet Therapy, Abstract J. A. M. A., 82:1487 (May 23), 1924.

9. Andrews, George C.: Diseases of the Skin. Saunders, 1931.

DIVERTICULOSIS OF THE DUODENUM*

By Kenneth S. Davis, M. D.
Los Angeles

Discussion *by John D. Lawson, M. D., Woodland; Milton J. Geyman, M. D., Santa Barbara; Carl H. Parker, M. D., Pasadena.*

DIVERTICULOSIS of the duodenum is not an uncommon finding in the routine gastro-intestinal examination, but seldom gives positive clinical manifestations of its presence. A study of the frequency of this condition shows a considerable variation in reports from different sources.

Based on the roentgenologic examination, Case[3] reports eighty-five cases of diverticulosis in 6,847 patients; Andrews,[1] 26 in 2,200 patients; Spriggs,[15] 10 in 1,000 examinations; Penhallow,[14] 11 in 2,200; Larimore and Graham,[8] 19 in 3,446, and Heacock,[5] 14 in 1,540 examinations. In the roentgen ray laboratory at St. Vincent's Hospital we have had twenty-four cases of duodenal diverticulosis in 2,503 consecutive gastro-intestinal studies. This gives a total of 189 cases of diverticulosis in 19,736 examinations, or approximately one per cent.

The statistics, quoted from autopsy records, give a total of 83 diverticula in 2,617 examinations, or a percentage of 3.2. This difference in the incidence would indicate that the roentgenologist is overlooking about two out of every three cases of diverticulosis.

HISTORICAL

Chomel, in 1710, is credited with the first description of a diverticulum from the duodenum, although this may have been a dilated ampulla of Vater, as it contained twenty-two gall-stones. Morgagni in 1761, Rähn in 1796, and Fleishman in 1815, described cases found postmortem. Up to 1908 less than one hundred cases of duodenal diverticula had been recorded.

In 1913 J. T. Case first demonstrated cases of duodenal diverticulosis diagnosed during life by means of the opaque meal. In 1915 Forsel and Keys diagnosed a case of duodenal diverticulum by the x-rays and confirmed their findings at operation.

CLASSIFICATION

Odgers[12] divides diverticula of the duodenum into:

1. *Primary diverticula,* in which there is no obvious cause for the appearance of the diverticulum;

2. *Secondary or acquired diverticula,* usually caused by duodenal ulcer or by adhesions from the gall-bladder or neighboring viscera. These diverticula are almost always found in the first portion of the duodenum, and in the autopsy room

---

* From the x-ray laboratory of St. Vincent's Hospital, Los Angeles.

* Read before the Radiology Section of the California Medical Association at the sixty-first annual session at Pasadena, May 2-5, 1932.

are seen to have a complete muscular coat. Rarely a secondary pulsion diverticulum will be found.

3. *Dilated ampulla of Vater.*

PRIMARY DIVERTICULA

Diverticula in this group are characterized: By their location, being found only in the second, third, and fourth portions of the duodenum; by the fact that they always grow out from the concave border of the bowel; they are usually in relation to the pancreas; typically they are flask-shaped protrusions of the mucous membrane through the muscular coats of the bowel wall and communicate with the lumen of the bowel through a constricted neck; they are found best developed in persons over fifty years of age; more than one diverticulum may be present.

Primary diverticula vary considerably in size, from one-half to five centimeters in depth; they also vary in shape, but the majority have an expanded fundus narrowing to a neck which opens by an orifice of varying size into the bowel. The sacs are usually collapsed and empty when found in the autopsy room, but may be filled with chyme or food. The walls of the pouch are made up of mucous membrane, muscularis mucosa, and a thin submucosa layer. The muscle stops abruptly at the neck of the sac.

ETIOLOGY

Herbst [6] quotes ten theories to explain the production of primary diverticula: chief among these is the congenital theory, in which the diverticula are thought to be abortive attempts to form supernumerary pancreases, or that the pancreatic anlages cause local defects in the musculature, with pouching occurring with age and increase in duodenal pressure. Nagel [11] states that "whatever the time or cause of their appearance, these diverticula are formed on a developmental basis, as they occur at actual or potential weak spots in the bowel wall." Odgers [12] states: "In any case the pouches are probably due to congenital *loci resistentiæ minoris.* At certain periods the mucous membrane has pierced possibly only partially the muscular wall, and at these spots normal wear and tear will produce pulsion diverticula." Odgers was able to demonstrate potential diverticula in the embryo, this consisting of marked activity of the duodenal epithelium, which proliferates so quickly that the lumen of the bowel is occupied by a series of vacuoles, some of which produce outward bulgings into the surrounding mesenchyme.

Duodenal ulcer plays an important part in the etiology of secondary diverticula. Robertson and Hargis [6] measured the distance between the pylorus and the ampulla of Vater in a large series of cases. They found that the distance was shortened by several centimeters in cases of duodenal ulcer with scars. Since most duodenal ulcers are located on the anterosuperior border of the duodenum, most of the shortening takes place along this border, leaving the inferior border redundant and a favorable location for the formation of a secondary diverticulum.

PATHOLOGY

In the majority of cases primary diverticula are found as empty sacs lying in a bed of areolar tissue in relation to the head of the pancreas. They have a comparative immunity from inflammation due to the sterility of the duodenal contents. Diverticulitis has been reported in several instances with or without perforation. Peridiverticulitis has been noted by Case and Maclean,[10] this consisting of adhesions. Gall-stones: several cases of gall-stones in the common duct, associated with a diverticulum near the ampulla of Vater, are on record. One of the cases in my series is of this type.

SYMPTOMS

The great majority of diverticula of the duodenum give rise to no symptoms and are discovered only in the gastro-intestinal examination or in the autopsy room. Even with a definite diverticulitis present there are no specific signs or symptoms which are pathognomonic of these pouches. In a case reported by Hunt and Herbst [7] the symptoms and x-ray findings were those of pyloric obstruction. At operation a tumor, involving the entire circumference of the pylorus, was found which proved to be a dissecting diverticulum communicating with the gall-bladder, and was packed with gall-stones. In the majority of the cases of duodenal diverticulitis the symptoms simulate duodenal ulcer or gall-bladder disease. In the "ulcer" type there is epigastric pain and tenderness, vomiting, sour stomach, heart burn, and flatulence. The "gall-bladder" type are usually found in diverticula near the ampulla of Vater. Symptoms in this type of case are those of jaundice and biliary colic.

DIAGNOSIS

No case has yet been accurately diagnosed on clinical evidence; the usual diagnosis is duodenal ulcer or gall-bladder disease. The only method of diagnosis is the gastro-intestinal examination. This examination should determine the size and shape of the diverticulum; the situation; the dimensions of its orifice; the mobility of the diverticulum; the length of time that barium is retained; and the relation of the diverticulum to the point of tenderness on palpation. The characteristic x-ray finding is a localized collection of barium, extraluminal, with a smooth, circumscribed border. Usually one can demonstrate the connection between the diverticulum and the lumen of the bowel, especially when the diverticulum is carefully palpated. Occasionally the diagnosis is based on the retention of barium in the diverticulum after the stomach and duodenum are empty. Twelve of my cases had a six-hour residue in the diverticulum.

DIFFERENTIAL DIAGNOSIS

Any shadow (gall-stones, urinary calculus, calcified mesenteric lymph nodes, etc.), lying in the close vicinity of the duodenum may be mistaken for a diverticulum. However, if a "scout" film of

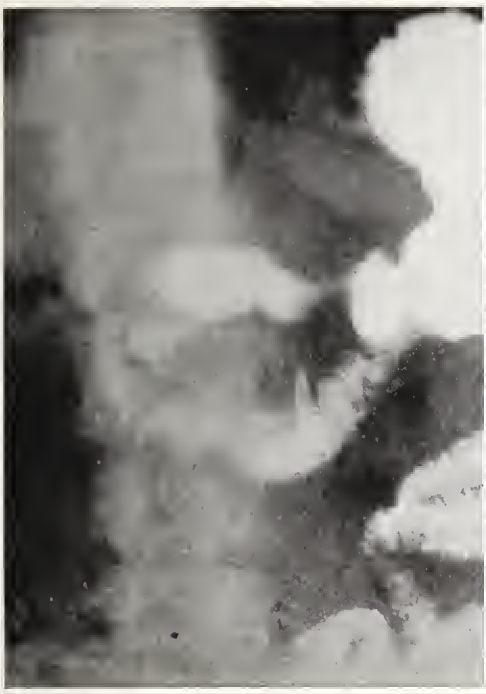


Fig. 1

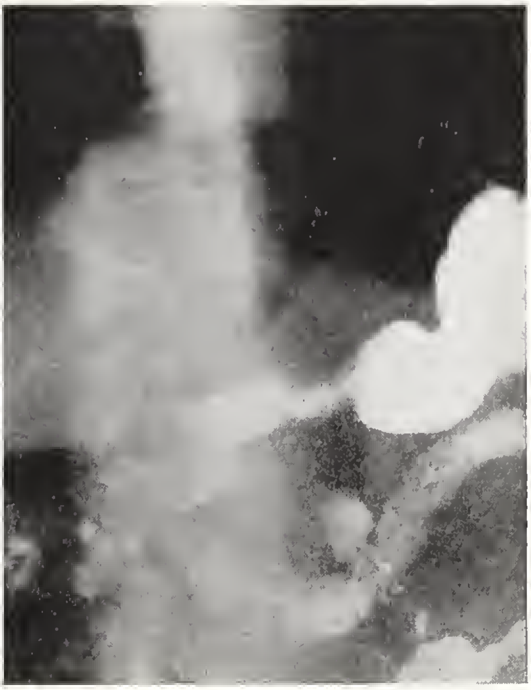


Fig. 2

Fig. 1 (Case 1).—Diverticula of the duodenum, associated with a gall-stone in the common duct. Removal of the gall-stone and drainage of the gall-bladder gave complete relief from symptoms. The diverticula were not removed.

Fig. 2 (Case 1).—A roentgenogram made five years later. Both of the diverticula show a distinct increase in size, despite the fact that patient remains free from symptoms.

the abdomen is made prior to the administration of the barium these should easily be ruled out. Barium retained in a haustra of the transverse colon may simulate a diverticulum of the duodenum in appearance. Careful palpation should differentiate between the two.

Pseudodiverticula due to a bulge, proximal or distal to the contraction of a duodenal ulcer, are extremely difficult to differentiate from actual diverticula secondary to ulcer. However, primary diverticula, which occur only in the second, third, and fourth portions of the duodenum, are not likely to be misdiagnosed in this respect. In one of my patients a large diverticulum of the fourth portion of the duodenum was mistaken for a perforated malignant gastric ulcer with an accessory pocket, as it contained a fluid level with a gas bubble at the top.

In another case a diagnosis of traction diverticula was made, but at the autopsy this was found to be the fibrous remnants of a gall-bladder which had perforated into the duodenum. Dilated ampulla of Vater cannot be differentiated from true primary diverticula. The three characteristics of a primary diverticulum are: its mobility on palpation; its lack of pain on palpation; and the tendency for six-hour retention of the barium in the diverticulum.

REPORT OF CASES

Case 1.—Patient, a male, sixty-six years of age, was admitted to the hospital February 2, 1926, complaining of anorexia, jaundice, and weight loss. About three months prior to admission he began having an indefinite epigastric distress not relieved by food or soda, but with temporary relief on catharsis.

Anorexia was pronounced, due partially to the flatulence brought on by eating. During this period he had lost approximately forty pounds in weight. Six weeks before admission he had a rather severe icterus which, however, was considerably improved when he entered the hospital.

Previous illnesses had no apparent bearing on present symptoms. He could never remember having had any gastro-intestinal troubles prior to the onset of present illness.

Roentgenographic Findings. Repeated gall-bladder dye studies failed to show any opaque substance in the gall-bladder although the patient had no diarrhea or vomiting, and the dye substance had been absorbed from the gastro-intestinal tract, none being seen in the scout film of the abdomen. The gastro-intestinal examination showed both the stomach and duodenal cap normal in appearance. In the second portion of the duodenum there was noted a triangular-shaped accessory pocket of barium in approximately the region of the ampulla of Vater. There was a six-hour retention of barium in this pouch.

There was also another pouch on the superior surface of the third portion of the duodenum, the latter having the characteristic appearance of a diverticulum (see Fig. 1). There was a normal motility of the barium except for the barium residue in the diverticulum. The barium enema failed to show any demonstrable lesion. No diverticula were present in the colon.

Operative Findings.—The gall-bladder was tense and distended with bile. No gall-stones were found. The common bile-duct was enormously enlarged and a gall-stone 1.5 by 2 centimeters in diameter was found lying in the lower end near the ampulla of Vater. The gall-stone was removed and a catheter passed into the hepatic duct and sutured. The gall-bladder was opened and drained. Neither of the diverticula was removed.

Following a rather stormy convalescence patient made a complete recovery, and up to the present time has had no recurrence of his symptoms. Despite this a roentgenographic study on December 5, 1931 (five years later), still showed both diverticula present (see Fig. 2). Both of the diverticula were distinctly larger than in 1926. Apparently the diverticula had no relationship to the patient's symptoms despite the gall-stone in a dilated common duct.

* * *

Case 2.—The patient, a female, age seventy-two, entered the hospital December 5, 1929, complaining of weakness, tarry stools, and pain in the left lumbar region. Five weeks before admission to the hospital she had a sudden gastric hemorrhage following which the stools had been constantly dark in color and tarry in appearance. During this time her only complaint was a slight burning pain in the epigastrium, relieved by food and soda. Her appetite was always good and there had been no nausea or vomiting. For ten days prior to her admission to the hospital she was quite weak owing to the constant loss of blood. There was a moderate weight loss.

Past History.—Usual childhood diseases; no serious illness since. For several years she had noticed a slight dyspnea on marked exertion, not enough, however, to prevent her usual daily activities. She did not recall having had any gastro-intestinal disturbance prior to onset of present symptoms.

Roentgenographic Findings. The preliminary scout film of the abdomen showed a large circular-shaped gas pocket in the epigastrium. After the patient had swallowed the barium this was found to lie medially to the lesser curvature of the stomach (see Fig. 3). The pocket was about three inches in diameter, spherical in shape, and there was a definite fluid level in its lower third. After the barium had been in the stomach for a few minutes it filled the lower third of the pocket. Gas was present in the pocket throughout the entire examination; change in position of the patient failed to change the fluid level. The contour of the stomach was smooth and symmetrical with no demonstrable filling defects, niches, etc., nor was there any demonstrable connection of the stomach to the pocket so far as could be determined. However, on direct anteroposterior palpation there was found a large carcinomatous ulcer on the posterior wall, giving the typical meniscus sign as described by Carman. This finding suggested that the pocket was due to a perforation of the ulcer with the formation of an accessory pocket. Exploratory operation was advised, but refused by the patient, who died February 3, 1930.

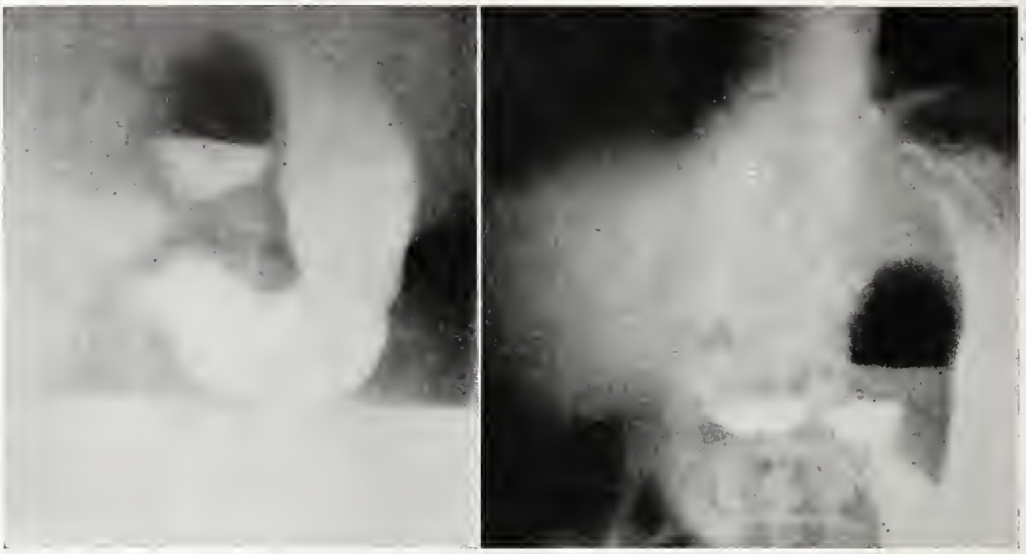


Fig. 3 (Case 2).—Diverticulum of the fourth part of the duodenum, associated with a carcinomatous ulcer of the posterior wall of the stomach. The diverticulum had all of the roentgenographic characteristics of an accessory pocket due to perforated ulcer. The fluid level remained unchanged with change in posture of the patient.

Autopsy Report.—The thorax is negative except for a moderate enlargement of the heart. "The stomach contains about 200 cubic centimeters of thick grayish fluid. About 3 centimeters from the pyloric ring on the posterior wall there is a large circular-shaped malignant ulcer 8 centimeters in diameter and three centimeters deep, with indurated edges from 1 to 1½ centimeters thick. The duodenum is dilated and contains a quantity of gray mucus. There is a large diverticulum in the fourth portion of the duodenum measuring about three inches in diameter. The diverticulum is adherent to the undersurface of the malignant ulcer, but there is no direct communication between the stomach and the pouch. The diverticulum communicates with the duodenum through an opening about 2 centimeters in diameter. Its walls are smooth and thin, apparently containing normal mucosa. There are no anomalies seen in the pancreas."

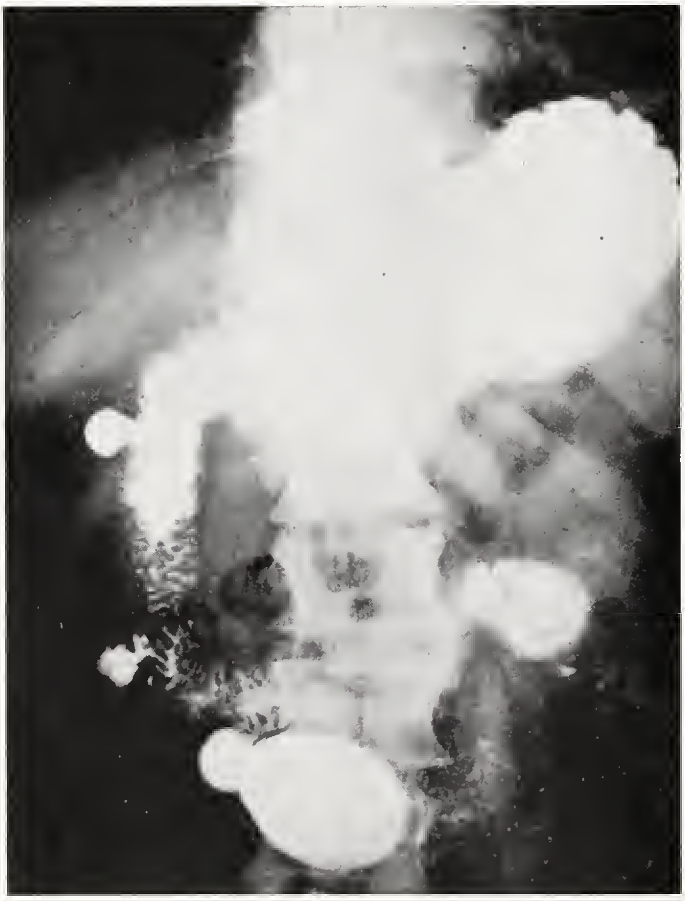


Fig. 4.—Multiple diverticula in the second, third, and fourth portions of the duodenum. The large diverticulum measured 4.5 centimeters in depth and 6 centimeters in diameter. There was a forty-six-day stasis of the barium in this diverticulum. Note the unusually low position of the third and fourth portions of the duodenum. The weight of the diverticulum may partially explain this abnormal position.

Anatomical Diagnosis.—"Carcinoma of stomach, ulcerated; diverticulum of duodenum; generalized arteriosclerosis; obesity; and hypertrophy of the heart."

COMMENT

In this case we find a large diverticulum of the fourth portion of the duodenum, with roentgenographic findings suggestive of an accessory pocket due to perforation. As a possible source of perforation there is a malignant ulcer on the posterior wall of the stomach. It is difficult to see how there could be a fluid level when the opening of the pocket into the duodenum was approximately two centimeters in diameter.

Lund[9] has reported a case of diverticulum of the fourth portion of the duodenum with roentgenographic findings very similar to this case. However, in his case there was no coexisting pathology in the stomach and the diverticulum communicated with the duodenum through a long narrow stem. In his case, too, the diverticulum had caused symptoms suggesting gall-bladder disease, while in my case no symptoms were noted prior to the onset of the cancer.

St. Vincent's Hospital.

REFERENCES

1. Andrews, E. W.: Duodenal Diverticula, J. A. M. A., 77:1309-1311, 1921.

2. Case, James T.: Roentgen Observations on the Duodenum, with Special Reference to Lesions Beyond the First Portion, Am. J. Roentgenol., 3:314, 1916.

3. Case, James T.: Diverticula of the Small Intestine Other Than Meckel's Diverticulum, J. A. M. A., 75:1463-1470, 1920.

4. Cole, L. G., and Roberts, D.: Diverticula of the Duodenum, Surg., Gynec., and Obst., 31:376-381, 1920.

5. Heacock, C. H.: Diverticula of the Duodenum, South. M. J., 22:348-351, 1929.

6. Herbst, William P.: Diverticula of the Duodenum, Minnesota Med., 10:364-368, 1927.

7. Hunt, Verne C., and Herbst, William P.: False Diverticulum of the Duodenum Containing Gall-Stones, with Cholecyst Diverticular Fistula, Surg. Clin. of North America, 5:807, 1925.

8. Larimore, J. W., and Graham, E. A.: Diverticula and Duplicature of the Duodenum with Reference to the Importance of Cholecystitis in the Production of Symptoms, Surg., Gynec., and Obst., 45:257-265, 1927.

9. Lund, F. B.: A Case of Diverticulitis of the Fourth Part of the Duodenum, New England J. Med., 198:986-988, 1928.

10. Maclean, Neil J.: Duodenal Diverticulitis, Ann. Surg., 85:73-79, 1927.

11. Nagel, G. W.: Unusual Conditions in the Duodenum and Their Significance, Arch. Surg., 11:529-549, 1925.

12. Odgers, P. N. B.: Duodenal Diverticulosis, Brit. J. Surg., 17:592-617, 1930.

13. Pendegrass, Robert C.: Duodenal Diverticula, Am. J. Surg., 5:491-497, 1928.

14. Penhallow, D. P.: A Case of Duodenal Diverticulum, J. A. M. A., 80:1372-1374, 1923.

15. Spriggs, E. I.: Duodenal Diverticula, Brit. J. Surg., 8:18-26, 1920.

DISCUSSION

John D. Lawson, M. D., Woodland Clinic, Woodland).—Diverticulosis of the gastro-intestinal tract is a subject which has found its way into the literature rather consistently. Previous to the advent of the radiopaque meal, it was by reason of anatomical study, but since 1913 the subject has been primarily of radiologic interest.

Eliminating the colon from consideration, the duodenum is most frequently the site of diverticulosis, referring, of course, to the congenital type of diverticulum. It would appear that the frequency of this lesion is much more common than is generally considered.

The roentgenologist must have in mind the possibility of this lesion in the examination of every patient, and while the second, third, and fourth portions of the duodenum are extremely infrequently involved by any pathologic condition amenable to roentgen-ray diagnosis, yet the observation of these structures must be carefully followed out in order that this type of lesion be not overlooked.

Examination must be made in both the prone and erect positions, and sufficient manipulation and rotation must be done to insure a complete visualization of the entire duodenum. It is frequently stated that diverticuli of the first portion of the duodenum do not occur, but in this I cannot concur, as diverticuli at this site have been noted in several cases which have come under my observation.

I believe the roentgenologist should most certainly stand his ground when a diagnosis of duodenal diverticulosis has been made and the surgeon fails to demonstrate the lesion at operation. There is very little possibility of the trained roentgenologist being in error in this opinion, and the detection and demonstration of a thin-walled sac in the retroperitoneal structures is a matter of considerable skill and good fortune on the part of the surgeon.

⁂

Milton J. Geyman, M. D. (1520 Chapala Street, Santa Barbara).—Doctor Davis has given us an excellent discussion of duodenal diverticula and his cases are very interesting. While there is no specific group of symptoms in duodenal diverticulitis, we believe many of them are symptom-producing and that their recognition is important. Our impression with regard to their occurrence is that they are more often multiple than single. We agree that the majority occur on the concave side and are almost always of the pulsion type. Rarely they may be seen projecting upward from the superior aspect of the last portion of the duodenum. We have also seen one case in which a long bottle-shaped diverticulum projected downward from the convex aspect of the duodenal second portion. Such unusual duodenal diverticula are usually of the traction type. Any barium-filled structure projecting from the convexity of the duodenal loop of course requires an exclusion of the possibility of cholecystoduodenal fistula.

In considering the differential diagnosis of duodenal diverticula Doctor Davis mentioned dilatation of the ampulla of Vater. Berg has published a case in which a roentgen diagnosis of peptic ulcer in the second portion of the duodenum was confirmed at operation. The roentgen appearance of this lesion closely simulated that which obtains with barium deposition in a dilated ampulla of Vater. We have never seen extrabulbar duodenal ulcer nor noted a report of such a lesion in the American literature. A consideration of peptic ulcer in the differential diagnosis of diverticulum is, therefore, probably of no great importance in this country.

⁂

Carl H. Parker, M. D. (65 North Madison Avenue, Pasadena).—Only two of our cases of diverticula of the duodenum have been operated upon where the diverticula were the point of attack. One case was lost track of immediately after the recovery from the operative procedure and thus is of no importance in drawing deductions.

The second case presented symptoms of discomfort in the upper abdomen, associated with vomiting. The clinical findings were suggestive of gall-bladder disease. The roentgenographic study revealed no evidence of pathology in the gall-bladder or stomach, but did show four diverticula of the duodenum and one of the jejunum. This patient was operated upon by Dr. Leroy Sherry of Pasadena, who succeeded in finding and removing three of the four duodenal diverticula. None of them presented any evidences of inflammation. The patient has been entirely relieved of her symptoms, so that it is reasonable to conclude that the diverticula were responsible for the disturbance. There was no other operative procedure.

⁂

Doctor Davis (Closing).—Since this paper has been in press the author has observed several cases of diverticulosis of the duodenum, one of which is especially worthy of presentation.

This patient, a physician, sixty-seven years of age, was referred for a gastro-intestinal examination on November 3, 1932, complaining of hyperacidity and indefinite epigastric distress. The hyperacidity had persisted for thirty years, so that a clinical diagnosis of duodenal ulcer had been frequently made previous to 1919. His epigastric distress consisted chiefly of moderate food retention in the stomach and a feeling of increased abdominal tension, especially in the epigastrium. In 1927 he had had symptoms suggesting an acute intestinal obstruction which, however, disappeared after taking paregoric. For the past ten years he has found it necessary to reduce the size of his meals, also to eliminate leafy and stringy vegetables. He has frequently induced vomiting to relieve the feeling of increased abdominal tension.

The gastro-intestinal examination revealed the presence of four diverticula in the upper small bowel; three of them were in the duodenum, the fourth was either in the fourth portion of the duodenum or in the first portion of the jejunum (see Fig. 4).

All four of these diverticula were on the *convex* side of the bowel, a location exactly the reverse of cases described in the literature. Certainly they were not in relationship with the head of the pancreas. The diverticulum in the first portion of the duodenum had a twenty-four-hour residue. The most distal diverticulum was 4.5 centimeters in depth and 6 centimeters in width, one of the largest on record. To date (December 19, 1932), there is still a moderate barium residue present in this diverticulum; a forty-six-day stasis. This diverticulum was tender on palpation, but not fixed.

Apparently this case is one in which the diverticulosis is the actual cause of the patient's symptoms.

FRACTURES—THEIR TREATMENT*

THE CLINICAL APPLICATION OF CERTAIN FUNDAMENTAL PRINCIPLES

By Frank J. Breslin, M. D.
Los Angeles

Discussion *by Ellis Jones, M. D., Los Angeles; Frederick G. Linde, M. D., San Francisco; Steele F. Stewart, M. D., Los Angeles.*

In assuming the responsibility of treating a patient who has sustained a fracture of the osseous system, a surgeon accepts a threefold obligation: First, to sustain the life of the patient. Second, to save the injured member. Third, to restore the function of the injured member in the shortest possible time.

THE SERIES HERE DISCUSSED

The accompanying series of five hundred fractures, treated on the surgical service of St. Vincent's Hospital, Los Angeles, demonstrates the advisability of bringing to the patient the method of treatment most suitable for each particular patient.

Femur	49	Scapula	6
Patella	15	Humerus	47
Both bones, leg	17	Both bones, forearm	28
Tibia	30	Radius	25
Fibula	15	Ulna	17
Potts	27	Colles	26
Astralagas	4	Semilunar	3
Os calcis	14	Scaphoid, hand	6
Scaphoid, foot	2	Thumb	13
Great toe	15	Metacarpal	18
Ankle	16	Phalanges, fingers	12
Phalanges, foot	22	Spine	14
Skull	10	Pelvis	18
Clavicle	28		

BOHLER'S RULES

There is no dogmatic method to which we must adhere in the treatment of fractures, but there are certain fundamental laws which must be observed if a surgeon wishes to obtain best results. Bohler [1] says, "In the treatment of every fracture, the following fundamental rules must be adhered to:

"1. The peripheral fragment must always be placed in the direction where the central one points.

"2. Every fracture must be reduced by means of traction and countertraction.

"3. After the reduction the fragments must be kept continuously in the right position until firm union takes place."

The conscientious surgeon may fulfill the first two of these principles when he aligns the fractured bone ends and applies traction and countertraction. But, unfortunately, it may be said that quite frequently surgeons neglect to keep fractured bone ends continuously in the proper position until nature has had sufficient time in which to produce a sustaining callus. Insufficient fixation and unnecessary examination lead to bowing of the callus and pseudarthrosis.

Plaster of Paris.—It is of historic interest that plaster of paris first came into surgical use in the year 1852. This method of fixation had many evident advantages, and was therefore used by surgeons in the treatment of all fractures, and of all pathologic conditions of joints. The casts applied were of enormous size and, because of their extreme weight, forced the patient to remain in bed, thereby obviating exercise. Because of this injudicious use of a good method of fixation, the pendulum swung the other way, and Lucas-Championière brought out his method of early massage and mobilization. In some instances the surgeon neglected to reduce and align the fractured bone ends before attempting massage. This indiscriminate use of meritorious method unfortunately left its train of poor results. What we surgeons of today should follow is not fixed methods of treatment, but fixed and fundamental principles which will give good functional results in the treatment of fractures.

FRACTURES OF THE FEMORAL NECK

One of the most important fractures which occurs in the body is that of the femur, particularly of the neck of the femur. In this series of five hundred fractures there were forty-nine fractures of the femur; and of these, twenty-two were of the femoral neck. This group of twenty-two may be worthy of analysis.

The object of treatment is to obtain an anatomical replacement of the fragments, together with adequate fixation, maintained until healing has been proved or disproved.

The several methods of traction were discarded early in this series, and Whitman's method was used whenever possible. Nitrous oxid-oxygen anesthesia was given except where contraindicated. Here morphin-scopolamin anesthesia was satisfactorily administered. The thigh was abducted just short of complete abduction together with internal rotation, and a plaster of paris spica was applied which included the entire foot of the injured side and ended just above the knee of the sound side. The patient was then placed on a firm bed and kept there for four months. At this time, healing can be clinically ascertained, augmented by the use of the x-ray.

Granting an accurate reduction in intra-articular fractures, it has been demonstrated that the formation of a callus happens when the blood vessels are permitted to grow uninterruptedly from the spongeosa of one fragment to the spongeosa of the other. Any motion in the hip joint ruptures these delicate blood vessels and permits of resorp-

---

* Read before the General Surgery Section of the California Medical Association at the sixty-first annual session, Pasadena, May 2-5, 1932.

Table 1.—*Fractures of the Neck of the Femur*

Age	Number of Patients	Results
	A.—Whitman Method	
30-40	One	One bony union
41-50	One	One bony union
51-60	Five	Three bony unions One fibrous union One nonunion
61-70	Seven	Three bony unions One fibrous union Two nonunions One death
71-80	Two	One nonunion One death
	B.—Extension Method	
71-80	Three	Two nonunions One death
	C.—No Treatment	
71-80	Three	One nonunion Two deaths

tion of the bone ends. This of course defeats our object of treatment and causes failure. Slipping or jarring is not possible in the properly conducted Whitman procedure.

Twenty-two patients with fractures of the neck of the femur were treated in this series. Of these patients five are dead, three expiring in the hospital and two after leaving the hospital. Two patients died of cardiovascular renal disease, and three died of bronchopneumonia.

The age incidence by decades shows one patient between thirty and forty, one between forty-one and fifty, and five between fifty-one and sixty. These patients presented no mortality. There were seven patients between sixty-one and seventy, with one death. The decade between seventy-one and eighty showed eight patients with four deaths.

The Whitman Method.—The Whitman method was used in sixteen patients, with two deaths. By age groups we find one patient between thirty and forty, with bony union; one between forty-one and fifty, with bony union. There were five patients between fifty-one and sixty, and of these, three showed bony union, one showed fibrous union, and one showed no union. Between sixty-one and seventy there were seven patients, with one death. Three showed bony union, one fibrous union, and two terminated in nonunion, with one death. Between seventy-one and eighty, there were two treated patients with one death. The surviving patient presented nonunion.

Extension Method.—Three patients were treated by the extension method, with one death, while two patients showed nonunion.

Table 2.—*Mortality Table*

Age	Number of Patients	Results
30-40	One	No deaths
41-50	One	
51-60	Five	
61-70	Seven	One death
71-80	Eight	Four deaths

NO TREATMENT GROUP

Under no treatment we included three patients who were too weak to stand any surgical procedure. Two of these died, with the survivor presenting nonunion.

It is evident that up to the age of seventy years we can expect a minimum number of deaths (7 per cent) and a high percentage of patients who show bony union (57 per cent). If the cases of fibrous union were included, our cases of union would have been (71 per cent). But in the years between seventy and eighty we can expect a high percentage of deaths (50 per cent); and a low percentage (nil) of bony union.

INTERTROCHANTERIC FRACTURES

Of the forty-nine fractures of the femur, we had twenty-seven patients with fracture distal to the femoral neck. Eight of these were of the intertrochanteric variety.

The patients were of an average age of fifty-seven years. There were no deaths, and all obtained bony union with good functional results. If a patient suffering with a fracture of this variety survives the usual constitutional embarrassments, he is almost certain to obtain a good walking leg.

These patients were all treated in a suspended Thomas splint, with adhesive plaster traction together with an average weight-pull of sixteen pounds. One-half of the patients were treated with early mobilization of the knee joint, and the rest were treated with the knee in the extended position. There was a fifteen per cent of loss of flexion of the knee joint in patients treated by either method.

As soon as possible after hospitalization, these patients were given sufficient morphin to control pain and shock. The pull was exerted in the long axis of the leg until shortening had been overcome, and then the entire splint was swung out into the position of wide abduction to prevent coxa vara. The splint was worn for an average of ten weeks, following which time the patient remained in bed for an additional four weeks. Then a walking caliper splint was applied, and the patient was permitted to bear 10 per cent of his weight with crutches. This amount of weight was gradually increased, and the brace was discarded between the seventh and eighth month.

The results obtained were bony union in all patients with an average of 15 per cent of limitation of flexion of the knee joint, and of 12 per cent of limitation of abduction of the hip joint. The nonindustrially injured returned to work in nine months, while the compensation cases returned to work at the end of one year.

FRACTURES OF THE SHAFT OF THE FEMUR

Of this variety there were nineteen fractures. The location of the fracture varied from the upper third of the femur to, and including, its lower articular end. These fractures were treated in eleven instances by adhesive plaster traction together with the Thomas splint, Hodgen's splint, Braun splint, Buck's extension, plaster of paris and overhead traction in children. In eight instances skeletal traction was used.

Union is seldom firm before twelve weeks have elapsed. At this time the callus is still soft, and weight bearing will cause angulation at the sight of fracture. We, therefore, always advise the use of a walking caliper splint to disperse strain away from the tender callus. The splint is worn for several months.

We were able to obtain osseous union and good walking legs in the nineteen patients who were under our care from the time of their fall. There were two patients who came under our care four months after the accident in whom it was necessary to perform an open reduction.

Skeletal Traction.—In this series of cases conservatism was practiced whenever expedient, but we are of the firm opinion that skeletal traction is the method of choice in fractures of the lower one-fourth of the femur with marked posterior bowing of the distal fragment. Skeletal traction with the knee partially flexed, will place the distal fragment in line with proximal fragment; it will relieve pressure from the nerves and blood vessels, and it will usually disengage incarcerated muscle tissue. The Mathews piano-wire pin and stirrup is the easiest to apply, and causes the least damage to the tissue.

If the surgeon elects to treat the suprapatellar type of fracture with the knee in the extended position, the distal fragment will be forced further posteriorly; the blood vessels and nerves will be continuously pressed upon, and the incarcerated muscle tissue will be tightly held between the fractured bone ends. Here an open reduction will have to be performed because of pseudarthrosis, or because of a vicious union. Even after the open reduction, the results are not all we would wish them to be because the patient has been given a "clinical test" and the pseudarthrosis may not have been definitely determined for several weeks or months after the accident. At this time adhesions have formed about the knee joint and perhaps also the ankle joint. There may be present bone and muscular atrophy, together with nerve and blood vascular damage. These conditions augur trouble after an open reduction.

FRACTURES OF THE PATELLA

Fractures of the patella, whether due to direct or indirect violence, cause separation of the fragments, the degree of which depends upon the strength of contraction of the extensor muscles of the thigh, together with the amount of laceration of the expansion of the quadriceps aponeurosis.

If the patient is young and one whose work is of a laborious nature, we advise open reduction. On the contrary, in patients past middle life whose work does not entail vigorous activity and in whom the separation is not too great, we offer nonoperative treatment. In patients with appreciable separation of patellar fragments, treated by the nonoperative method, we seldom see a true bony union, but we can always obtain a functioning fibrous union, the strength of which may reach astounding proportions. Eight patients were treated by the open method and seven by the closed method, with good functional results.

FRACTURES OF BOTH BONES OF THE LEG

Wherever possible a plaster of paris cast was used in the treatment of this important fracture, the reason being that it was simpler. If shortening had been overcome at the original reduction, anteroposterior and lateral bowing was easily handled by partially splitting the plaster cast and then wedging the fragments to the proper alignment by inserting pieces of wood which later were fixed in place by a few turns of a plaster bandage. This procedure was possible in twelve of our seventeen patients. In five cases we resorted to the Mathews type of skeletal traction. Bony union and good functional results were obtained in all patients of this series. In one patient who had sustained a compound fracture, it was necessary to disengage incarcerated soft tissues and perform a sliding bone graft, after the Albee technique.

POTT'S FRACTURE

This type of fracture should be treated as early as possible by flexing the leg upon the thigh, followed by moulding the fragments over into extreme adduction with the foot flexed to a right angle. A plaster of paris splint is then applied. After ten days have elapsed, the plaster is removed, gentle massage and active motion is inaugurated and practiced every few days, the splint being worn in the meanwhile. Weight bearing is permitted after the tenth week. Even after an accurate reduction, if the foot is not held in the grossly overcorrected or adduction position we find painful feet and ankles due to a condition of faulty posture and flat-feet. At times it is advisable to wedge and extend the inner side of the heel of the shoe because of symptoms from a weakened longitudinal arch of the foot. By taking these factors into consideration we were able to obtain good functional results in the twenty-seven cases of this series.

FRACTURES INTO THE ANKLE JOINT

Fractures which enter into the ankle joint are always serious and at times leave some degree of permanent disability. We have obtained the best results by immediate reduction under general anesthesia. The leg should be flexed on the thigh and the foot manipulated in an attempt to restore the line of weight bearing, permitting the foot to rest at a right angle with the leg. If the posterior edge of the tibia is fractured, the foot should be dorsiflexed past 90 degrees, then the molded plaster splints are applied. The ankle should be inspected every five days, and after six to eight weeks the splint may be removed and graduated weight bearing permitted from the eighth to sixteenth week.

Fractures which involve the anterior lip of the tibia should be treated with the foot plantar flexed. This should be checked by x-ray examination and, if necessary, skeletal traction through the os calcis may be used with the foot plantar flexed.

In fractures of both malleoli with gross widening of the ankle joint and with separation of the lower ends of the tibia and fibula, we may obtain partial permanent disability resultant from an unstable support for the leg and a subsequent arthritis. In six fractures of this type we obtained 30 per cent of disability. However, in three subsequent cases this amount of disability was cut down to 12 per cent by using skeletal traction.

FRACTURES OF THE OS CALCIS

This fracture is of serious significance because of its economic nature. Fractures of this type are usually found in vigorous individuals who earn their livelihood by working above the ground.

Fractures of the os calcis may show lateral widening, avulsion of fragments or simple lines without appreciable deformity. Treatment consists of restoring the normal configuration of the bone by the padded hammer, or redresseur, followed by a snugly fitting plaster dressing. Disability remains from six to twelve months, and good functional results were not obtained in over 70 per cent of the fourteen cases in this series.

FRACTURES OF THE HUMERUS

A. Fractures of the Anatomical Neck of the Humerus.—These may be impacted or in grossly bad position. Generally speaking, the impacted fractures should not be disturbed, particularly in the aged. Good functional results can be obtained by the use of a sling to the forearm, accompanied by active motion and massage. If the fractured fragments are in grossly abnormal position, it may be necessary to apply extension in bed for a few weeks followed by the aeroplane type of splint.

B. Fractures of the Surgical Neck and of the Shaft of the Humerus.—In this type of fracture if the bone is impacted, or with little displacement, good results are obtained by conserving the position of the fragments by coaptation splints, together with fixation of the shoulder and elbow, aided by an ordinary sling. If there is overriding and marked displacement of the fractured fragments it becomes necessary to exert continuous traction. A fairly comfortable and extremely efficient method of treating these patients is a suspended Thomas arm splint. By using the suspension feature the patient can sit up or lie down in bed with the splint at all times in the proper position.

In forty-seven fractures of the humerus treated conservatively, we obtained good functional results in all cases. In seven patients with a fracture high up on the shaft which failed to come down by adhesive plaster traction, we inserted a Mathews pin through the condyles, or olecrenon, with 80 per cent of apposition in seventy-two hours.

FRACTURES OF THE SCAPHOID BONE OF THE HAND

These fractures should be treated early with a plaster of paris splint, which runs from the metacarpophalangeal articulation up to the elbow. The wrist is dorsiflexed and the hand placed in ulnar deviation. The splint is worn for six or eight weeks. At this time a woven elastic bandage is worn for two or three weeks longer. By following this procedure we were able to obtain bony union in all six of our cases. In our experience, the surgical removal in whole or in part of the scaphoid bone leaves a certain degree of partial permanent disability.

OTHER FRACTURES

The treatment of fractures of the elbow, forearm, hand, spine, and pelvis has now become standardized; the results are quite similar and will not be discussed at this time.

OPEN OPERATIONS

Brilliant results should follow open reductions for fractured bones, but good results depend upon many factors:

1. The surgeon must be particularly trained, with a highly trained assistant, aided by a competent operating-room personnel.
2. The operation must be definitely indicated.
3. The decision to operate must be made early, and then carried out while using scientific mechanical principles.
4. The fundamental principles of general medicine must be understood by the surgeon in charge.
5. Forethought is necessary. The surgeon is responsible for having at hand adequate retentive apparatus to be used postoperatively.

CAUSES OF POOR RESULTS AFTER OPEN OPERATION

1. An overanxious surgeon who insists upon an exact anatomical replacement of the fractured fragments rather than a satisfactory functional result.

2. The operation is not indicated. By this we mean the surgeon has not equipped himself with a proper knowledge of the principles of traction and countertraction. His knowledge of skeletal traction may be superficial or prejudiced because of a few early unfortunate experiences. A supra-patellar fracture may give a brilliant result if treated by skeletal traction with the knee in the flexed position, and it may yield a miserable termination if treated by open operation if particular care has not been exercised to continuously maintain the corrected position of the lower fragment long after the operation has been completed.

3. The operation is performed too late. The interposition of soft parts should be ascertained within a reasonable length of time. Incarceration or laceration of the musculospiral nerve should be manifest early. So, too, the fact that the anatomical neck of the humerus cannot be replaced in a particular case should be decided before the patient has suffered from nerve and blood vascular damage, peri-articular adhesions and perhaps a secondary anemia from prolonged traction in

bed. An evident pseudarthrosis in the shaft of the femur should not be treated in a plaster of paris spica which immobilizes the lower chest wall, hip, knee and ankle joints for six or eight months before resorting to open operation. The operation may result in perfect bony union, and still the patient may have a residual partial permanent disability because of secondary changes in the hip, knee and ankle joints. All these unfortunate conditions can be avoided by early consultations with highly trained bone and joint surgeons.

4. The surgeon disregards the fundamental principles of general medicine. Abscessed teeth, infected sinuses, bronchiectasis, diabetes, severe nephritis, insanity, alcoholism, pernicious anemia, and advanced tuberculosis all play a rôle in mitigating or preventing good results after open reductions.

5. The surgeon lacks forethought. We have seen surgeons have the position of fractured bone ends lost and grafts fractured by entrusting the handling of an extremity to an uneducated orderly or to a not too interested assistant.

RECAPITULATION

In certain fractures it is absolutely necessary to perform an open operation. The decision to operate should rest upon the shoulders of a surgeon particularly trained in bone and joint surgery, who should be able to weigh the advantages and disadvantages of traction and countertraction, and also of skeletal traction, in the particular case under observation. If experience has shown that these methods of treatment will not give good functional results, open operation may then be performed. But the injudicious subjecting of patients of all ages, states or conditions of health to anesthetics of several kinds and operative procedures of varied lengths will sooner or later cause embarrassment to all concerned. If one visits the noteworthy fracture clinics of our country, one will be struck by the fact that the number of open operations is rapidly diminishing.

It is evident, therefore, that there is no dogmatic procedure to be followed in treating a fracture. Good results depend upon an adequate study of each patient. There is a dire necessity that the surgeon develop a perfected technique in reducing the fractured bone ends and have at hand satisfactory methods of retention either by using plaster of paris or one of the various acceptable splints. He should understand the principles of traction and countertraction and be able to quickly apply them. If the simpler methods of traction have not worked out satisfactorily in a particular case, the surgeon should fearlessly make use of skeletal traction. If it is apparent that these methods of treatment will not prove to be efficacious in a particular case, open operation should be considered and speedily performed.

2007 Wilshire Boulevard.

REFERENCE

1. Bohler, Lorenz: Treatment of Fractures, page 1. Second edition. 1930.

DISCUSSION

Ellis Jones, M. D. (201 Medical Office Building, Sixth Street at Lucas, Los Angeles).—We are grateful to Doctor Breslin for this survey of the general treatment of fractures in a large metropolitan hospital. His wide experience cannot fail to command our respect and stimulate our interest.

I am particularly interested in the presentation of end-results of treatment of fractures of the femoral neck. Traction methods are obsolete. Royal Whitman's method of reduction of fresh fractures of the femoral neck by abduction in internal rotation has stood the test of time and experience, and justifies our acceptance of this method as good treatment, especially in patients in early or middle life.

We have been led to believe, however, that an anteroposterior x-ray of a reduced fracture gives us an adequate interpretation of the reduction. This is not true. An anteroposterior view will not reveal a lateral angulation of the neck or demonstrate our failure to secure accurate apposition. A lateral view, made according to Clayton Johnson's technique, should be made routine in the roentgenologic study of all fractures of the femoral neck.

However, even the most accurate reduction of femoral neck fractures does not at all insure union. We believe that failure of union is largely due to the small size of the femoral neck, its minimal blood supply, interposition of the torn capsule in comminuted fractures, and the difficulty of maintaining accurate contact in oblique fractures of the neck.

In patients in middle and later life the occurrence of nonunion is variously reported in from 30 to 70 per cent of all patients treated by the conservative method. It is for this reason that in selected cases I have explored fractures of the femoral neck in such patients and have endeavored to obtain a clearer conception of the mechanical factors involved in a particular fracture. At operation an accurate reduction is obtained under the eye, and internal fixation is maintained by a trochanteric bone transplant bridging the neck and reinforced by adequate plaster fixation. Bridging of the fracture line with an autogenous bone graft provides firm internal fixation, and we believe with Albee that the bone graft furnishes "an osteogenetic callus-forming influence, serving as a vascular conducting scaffold, conducting blood from the vascularized trochanteric region to the anemic capital fragment." Murray states that the bone graft acts as an actual calcium source for the healing granulation tissue.

I believe that operative treatment has a distinct place in the treatment of fractures of the neck of the femur, and that there remains a relatively large group of patients in whom operation offers the only reasonable opportunity to obtain a good functional end-result. So long as surgeons are content to treat all fractures of the femoral neck by the Whitman method, regarding the choice of this method as final, there can be little hope of raising the percentage of successful end-results.

⁂

Frederick G. Linde, M. D. (1020 Fitzhugh Building, 384 Post Street, San Francisco).—Doctor Breslin's paper should show how the treatment of fractures is carried out in a well organized and up-to-date fracture service. The résumé signifies a careful endeavor to arrive at early function by the inclusion of such practical methods, more recently introduced, as well as the older types of treatment which have had favor in the past. His results compare most favorably with those of other services of similar character and size.

It is particularly gratifying to note the emphasis placed by Doctor Breslin on conservatism. Open reduction in all cases cannot now be accepted as the usual method of procedure. Major operative hazards are no longer necessary in most cases, since we have such effective means of accomplishing the desired results without them. The proper and comprehensive use of skeletal traction has minimized the necessity for major surgery in most instances, and is a procedure which should be thoroughly understood by any surgeon who is called upon to treat fractures. Doctor Breslin does not hesitate to advise open reduction when indicated, but the indications should definitely be those which have signified the failure of conservative measures. The percentage will be extremely low.

⁂

Steele F. Stewart, M. D. (3780 Wilshire Boulevard, Los Angeles).—Doctor Breslin has furnished us with an excellent reason for the satisfactory treatment of fractures.

We are pleased to note his commendation of the Mathews piano-wire form of skeletal traction which, so far as we know, is the most satisfactory method of applying skeletal traction, being much less damaging to apply than either the Steinman pin or the ice-tong type of traction; because of its small size, it can be easily applied to very much smaller points. We feel that traction is most desirable in practically all types of fractures, making use of the natural splinting action of the attached periosteum and surrounding muscles. The Mathews system has a further advantage of being applicable to parts where there has been considerable damage to the soft tissues.

⁂

Doctor Breslin (Closing).—I wish to thank Doctors Jones, Linde, and Stewart for their discussions. It is true that an anteroposterior view of the hip will not reveal a lateral angulation of the neck of the femur, or show the cause of our failure to secure an accurate apposition of the fractured fragments. Doctor Davis, the roentgenologist for St. Vincent's Hospital, has adopted the Johnson technique as a routine measure in the roentgenologic study of all fractures of the femoral neck. What we have attempted to do in the treatment of all fractures is to obtain good functional results with a minimum of risk, particularly as to life. We have therefore made a serious effort to keep our open reductions at the lowest possible level.

THE LIVER IN CHRONIC HUMAN AMEBIASIS—ITS RELATIVE SIZE

By **Luther Musson Boyers, M. D.**
Berkeley

Discussion *by Alfred C. Reed, M. D., San Francisco; John V. Barrow, M. D., Los Angeles; Rawson J. Pickard, M. D., San Diego.*

In 1925 the presence of both motile and encysted forms of *Entameba histolytica* in the duodenal area was reported.[1] This finding again emphasized the importance in chronic amebiasis not only of the duodenal area, but of the whole liver area as well, and raised the question whether liver size might or might not have relative importance in helping to delineate the symptoms and signs of chronic human amebiasis as seen in California. To this end we began to record liver measurements. The data have been accumulating for the past eight years and are now for the first time assembled and digested by graph.

METHOD OF MENSURATION

In choosing the method of mensuration the author's effort was to secure one as simple and direct as possible, using percussion and palpation in the right midclavicular line.

Actually in our own work the sequence of events leading to this type of mensuration was: first, apparent increase in positive findings of *Entameba histolytica* in the feces when bile or bile salts had been administered by mouth previous to examination of fecal smears; second, demonstration of both motile and encysted *Entameba histolytica* in the duodenal area in material obtained by duodenal tube; third, failure of a highly competent roentgenologist to recognize the great increase in size of the right lobe of the liver caused by amebiasis accompanied by liver abscess.

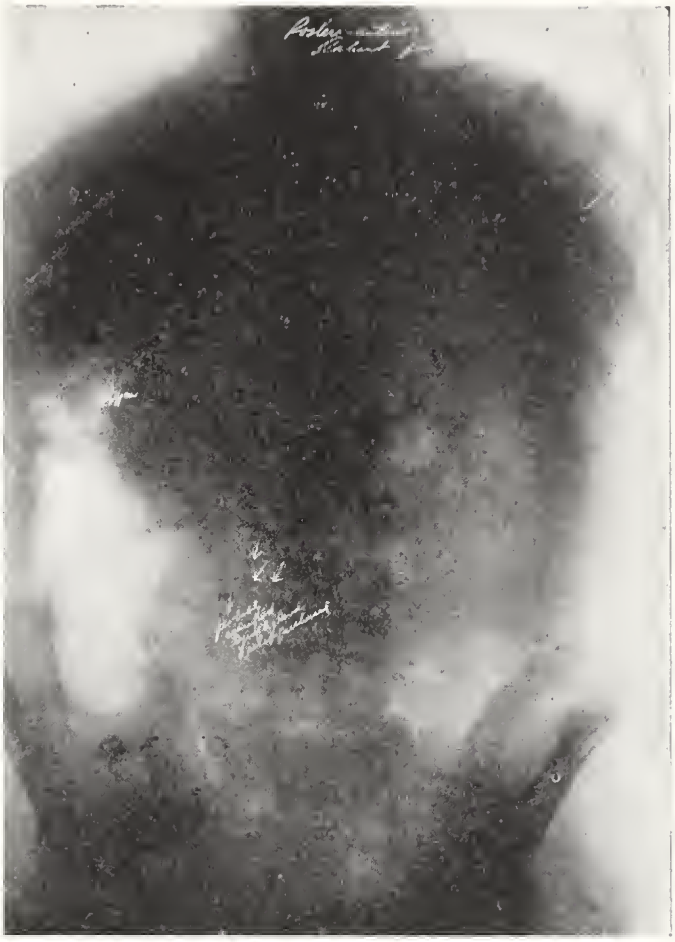


Fig. 1.—Illustrates the occasional impossibility of ascertaining the size of the liver by roentgenogram. The individual of whom this roentgenogram was made had a liver containing a large abscess in the right lobe, this lobe extending well below the level of the umbilicus. The liver was described by the roentgenologist as "normal in size."

An illustration of the inadequacy of roentgen-ray examination as a means of determining liver size is found in the accompanying reproduction of a roentgen-ray film made in 1925. As is evidenced by the notations in script on the film, the examiner found considerable difficulty in orienting himself as to right and left. The pertinent part of the conclusion by this examiner was that "the liver shadow is not large." Yet at the time that roentgenogram was made the liver was a large mass, firm in consistency, painful on pressure, containing in the right lobe a large abscess fully 15 centimeters in diameter. The lower edge of the right lobe extended to a level at least two fingerbreadths below that of the umbilicus, and was easily palpable. The roentgenologist's difficulty suggests that since roentgen-ray examination can only lead to a record of physical density, the values obtained by it will always be limited by discernible contrast. In the event of lack of contrast there can be no mensuration.

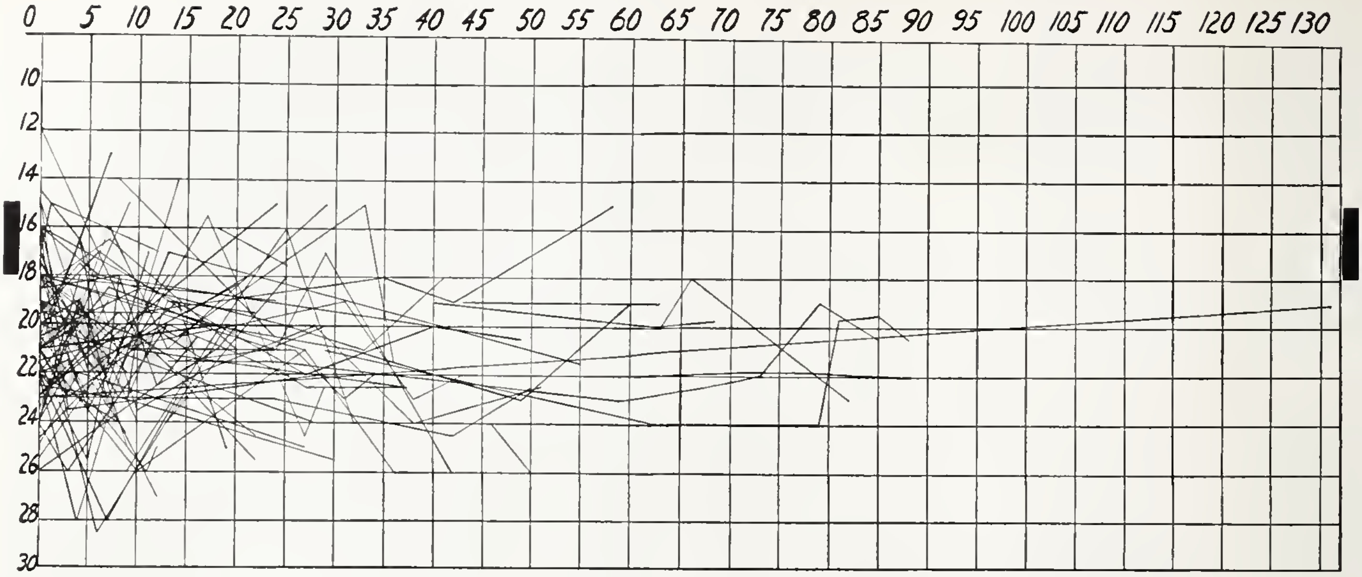


Chart 1.—(With abscissas reading 0-30) is as follows: Ordinates, time in months. Abscissas: Measurement in centimeters of the diameter of the right lobe of the liver in the midclavicular line (by percussion and palpation).

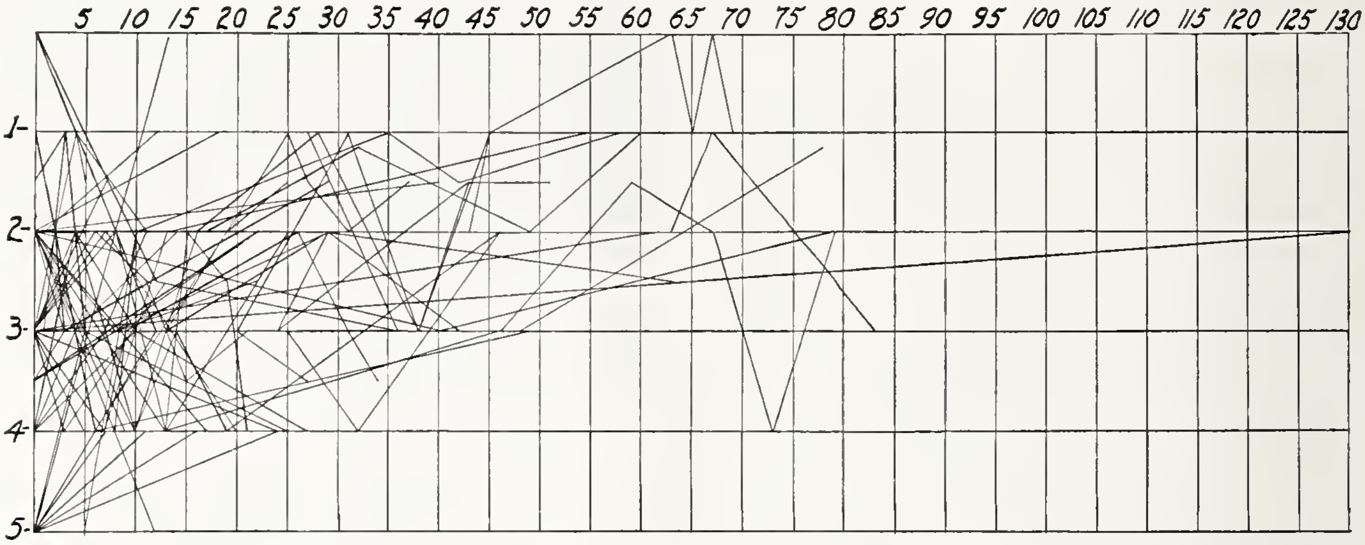


Chart 2.—(With abscissas 0-5) is as follows: Ordinates: Time in months. Abscissas: Measurement in fingerbreadths of the right lobe of the liver downward from the costal margin in the midclavicular line (determined by percussion and palpation).

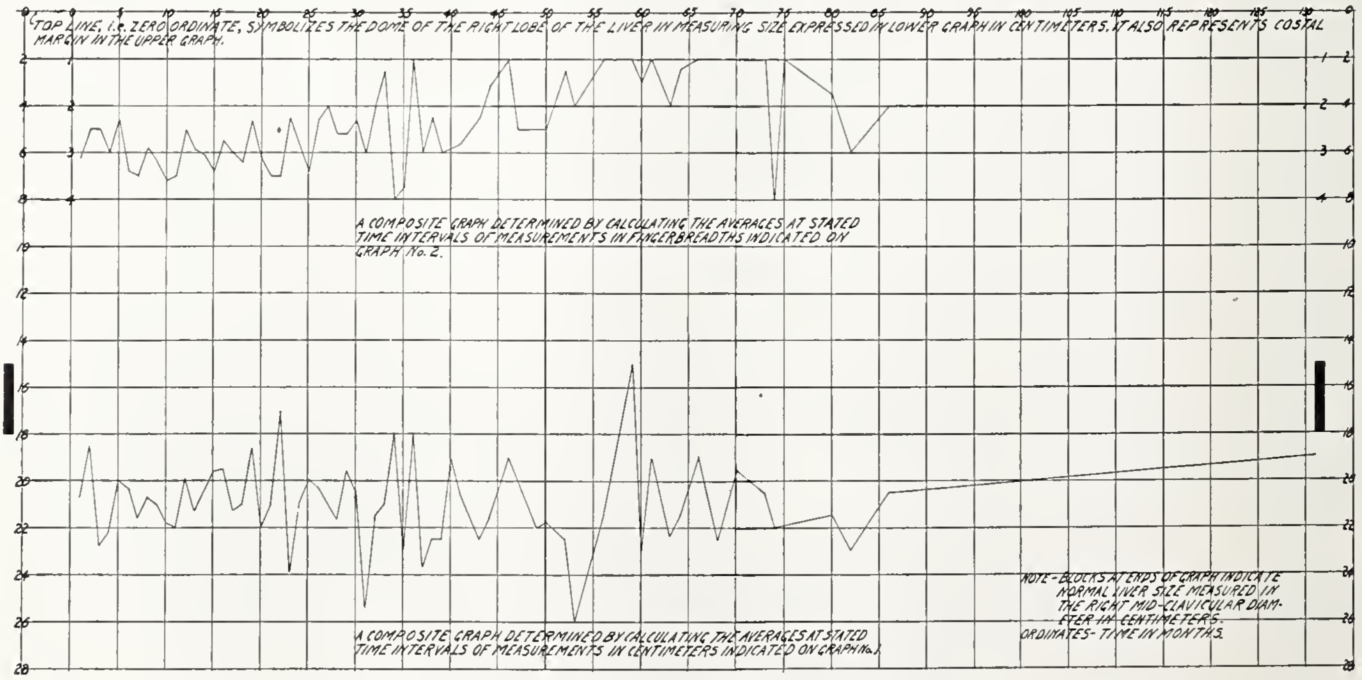


Chart 3.—Upper graph: A composite graph determined by calculating the averages at stated time intervals of measurements in finger breadths indicated on Graph No. 2. Lower graph: A composite graph determined by calculating the averages at stated time intervals of measurements in centimeters indicated on Graph No. 1.

The literature pertaining to measurement of the liver includes descriptions of fairly numerous "anatomical" measurements in the nonliving, roentgen methods including both screen and film in the living, and dye methods plus roentgen ray in the living.[2]

MEASUREMENT STANDARD ADOPTED

Because of the wide range in anatomical size of the liver in the human being, and out of experience, we selected in the present study the "normal" adult anatomical diameter of the right lobe of the liver in the right midclavicular line as ranging between 14.5 centimeters and 18 centimeters. This range is indicated on graphs, numbers 1 and 3, by the blocks on the right and left margins. It is believed that these graphs may serve to show at a glance the predominance of enlarged livers in cases of chronic human amebiasis and may suggest also a slight drift toward the "normal" limit under prolonged care. It would seem to be apparent that the problem of liver involvement in these cases is a continuous one.

MATERIAL FOR THE GRAPHS

The figures from which the lines on the graphs are derived represent actual data from our records. They represent a selection of eighty-four out of one group of six hundred seventy-four cases of amebiasis where the physique and temperament of the patient permitted relatively prolonged control, the average duration being two years and three months.

The total number of males in this study is thirty-nine (constituting 46.42 per cent of the patients. The total number of females is forty-five (53.57 per cent of the patients).

Seventy-seven of the eighty-four cases are represented on the fingerbreadth graph. There are two hundred fifty-one measurements in fingerbreadths, *i. e.*, two hundred fifty-one points on the fingerbreadth chart.

Seventy-nine cases are represented on the centimeter chart. There are two hundred sixty-nine measurements recorded on this chart.

The shortest period of time represented—that is, the shortest period of time elapsed between the first and final measurement—is two months. The longest period is one hundred thirty-one months. The average length of time for the eighty-four patients is 27.62 months, or two years and approximately three months.

TENTATIVE POSITIVE CONCLUSIONS

The tentative positive conclusions may be:

1. In chronic human amebiasis there is in this series an increase of activity in the liver area as measured grossly by liver size.

2. The feature of this activity is variability, the size of the liver changing during disease and treatment in a manner not uniform. The lack of uniformity reflects our ignorance of all the factors involved and their relationship. As an example, we have not correlated liver size and a very common arterial hypotension.

3. The graphs would seem to suggest a long-term drift toward smaller liver size under the influence of treatment.

4. The need for more accurate methods of delineating liver size than short-range roentgen-ray palpation and percussion is obvious.

Bank of America Building.

REFERENCES

1. Boyers, L. M., Kofoid, C. A., and Swezy, O.: Chronic Human Amebiasis, J. A. M. A., Vol. 85, No. 19, pp. 1441-1447, 1925.

2. References to measurement of the liver in human beings:

(*a*) Pfahler, G. E.: The Measurement of the Liver by Means of Roentgen Rays, Based on a Study of Five Hundred and Two Subjects, Am. J. Roentgenol., Vol. 16, No. 6, p. 558.

(*b*) Stewart, William H., Einhorn, Max, and Illick, Earl.: Hepatography and Lienography Following the Injection of Thorium Dioxid Sol (Thorotrast), Am. J. Roentgenol., Vol. 27, No. 1, p. 53 (Jan.), 1932.

(*c*) Tripoli, Carlo, Haam, Emmerich, and Lehman, E. B.: Roentgenographic Visualization of the Liver and Spleen in the Human—A Preliminary Report, Am. J. Roentgenol., Vol. 27, No. 2, p. 265 (Feb.), 1932.

(*d*) Bassler, Anthony: Diseases of the Intestines, Including the Liver, Gall-Bladder, Pancreas, and Lower Alimentary Tract. F. A. Davis, Philadelphia, 1928, p. 18: "The transverse diameter of the liver may be given at from 22 to 24 centimeters (8½ to 9½ inches); the greatest vertical dimension or depth is *about 16 centimeters* (6¼ inches); the anteroposterior diameter, 12 to 18.5 centimeters (4¾ to 7¼ inches)."

(*e*) Stengel, Alfred, and Kern, R. A.: Diseases of the Liver and Gall-Bladder, Nelson's Loose-Leaf Living Medicine. Thomas Nelson & Sons, New York. Vol. 5, Chap. 25, p. 472 (Nov.), 1928: "According to Bamberger, the absolute vertical dullness in the axillary line is 12 centimeters in the adult male and 10.5 centimeters in the female; in the mammillary line the dullness is 11 centimeters in the male, and 9 centimeters in the female; in the parasternal line, 10 centimeters and 8 centimeters."

(*f*) Williams, J. F.: A Textbook of Anatomy and Physiology. W. B. Saunders, Philadelphia, 1924, p. 403: "The liver measures 15 to 17 centimeters (6 to 7 inches) from front to back and about 10 centimeters (4 inches) from above downward in the thickest part."

(*g*) Morris, Henry, and McMurrich, J. P.: Morris's Human Anatomy: A Complete and Systematic Treatise by English and American Authors. P. Blakiston's Son & Co., Philadelphia, 1907, p. 1117, on *The Liver:* "It measures from right to left, 17 to 25 centimeters; from before backward, 7.5 to 15 centimeters; and 15 to 17 centimeters from above downward in the thickest part of the right lobe."

(*h*) Cunningham, D. J.: Textbook of Anatomy, William Wood & Co., New York, 1902, p. 1060, on *Weight and Size of the Liver:* "The average size of the liver may be briefly expressed as follows: It measures in the transverse direction about 7 inches (17.5 centimeters); in the vertical, 6 to 7 inches (15 to 17.5 centimeters); and in the anteroposterior, on the right side where greatest, about 6 inches (15 centimeters).

DISCUSSION

Alfred C. Reed, M. D. (350 Post Street, San Francisco).—It has been known for years that the liver was easily infected in amebiasis and it has been suggested that every case of amebiasis included more or less transfer of amebas to the liver, accompanied by a greater or lesser degree of hepatitis. The importance of liver invasion is difficult to assess but of immediate consequence in therapy. Three points are involved: (1) It is desirable to forestall the development of hepatitis into hepatic abscess. (2) It is desirable to improve impaired liver function for the sake of the general health and resistance of the patient. (3) It is undesirable to use arsenicals, for instance, in treatment if liver function is much impaired. It follows logically, then, that the functional and infective status of the liver, with reference to amebas, ought to be established in every case of amebiasis. The immediate practical question is how best to establish this hepatic status.

The author, in the paper under discussion, suggests external direct mensuration as a practical method. He, himself, notes the major objections to the method, chiefly in the great variation in normal size. It is my opinion that mensuration is of use, but is secondary in practical clinical value to functional tests; and that x-ray examination offers more accurate data as to size than does external mensuration. The data and conclusions in the paper are valuable and interesting, but must be considered in the light of the whole problem. It may well be that experimental methods will be necessary to reach a final working rule.

⁂

John V. Barrow, M. D. (1930 Wilshire Boulevard, Los Angeles).—This paper is timely because of the increasing interest in amebiasis. Several investigators report a moderately high percentage of infestation among the general public. In my own practice the infestation occurs more frequently because of reference and gastro-intestinal work.

The actual measurement of the liver by roentgen ray is very difficult. However, clinically the liver is often increased in size. I am sure this increase is not always due to either large or multiple abscesses. An influence on the liver not accounted for by abscess is that of amebic toxins. Whether the increased icterus index in these cases is a measure of the disturbed liver function has not yet been proved. The inability of the liver to get rid of the surplus bile pigment in the blood can rationally be considered disturbed liver function. In considering the toxicity of amebiasis we may well consider a phase of enlargement as in other chronic toxemias with the subsequent shrinkage, as is the terminal process in severe liver poisoning. The function most disturbed is probably the proteopexic retardation. Upon the gluco-protein combination depends the detoxication of such substances as the body of the ameba may well contain. The toxic protein radical may be taken care of wherever tissue goes into solution for body use. Wherever this physiologic process fails antigens become a burden to normal physiology. Allergic phenomena present themselves in these protozoan cases, as attested by the frequency of arthritis, neuritis, iritis, and disturbance in the blood tissues. Under the influence of treatment the liver becomes clinically better, as shown in Doctor Boyers' third conclusion.

The points made by the author are very helpful, clinically, to all physicians and surgeons. The admitted truth of his contentions must be left for the pathologist to confirm at autopsy. Where proper treatment is instigated in reasonable time the postmortem findings become fewer and fewer.

⁂

Rawson J. Pickard, M. D. (520 E Street, San Diego)., The ameba of the chronic amebiasis seen in the temperate zone has been distinguished by Brumpt from the ameba of dysentery on the basis of its "nonpathogenicity." This point is in error. Boyers, Reed, Craig, Barrow, Ravaut, and others have proved that there is a definite symptom complex in infections with this ameba, although it rarely gives rise to dysentery or liver abscess. I submitted the argument that this very difference in disease produced was a support for Brumpt's separation of "E. dispar" as a distinct amebic race (1927).

Taken as a whole the symptoms of chronic amebiasis, although largely subjective, are specific and diagnostic. The author, in this paper, gives us a measurable objective proof of the disturbing effect of this infection on the digestive organs. Judging from the curves in Chart 3, at the fifteen or twenty-month period, a period that includes the majority of the observations, there is little change in the size of the liver during treatment, but these same patients who keep returning for observation are notoriously those who improve under treatment but who continually relapse.

At a time when there is overexploitation of laboratory procedures, and especially of the roentgen ray, Doctor Boyers' sane and common-sense emphasis of careful physical examinations is of a practical value, as great as is the fact that in this series of patients with enlarged livers he has furnished an impressive objective proof of the damage caused by chronic amebic infection.

⁂

Doctor Boyers (Closing).—I wish to thank Doctors Reed, Barrow, and Pickard for their discussions. In reply to a personal letter from one of them, I am adding the following information:

From records of 850 cases of chronic human amebiasis, liver measurement (as described above) has been made once, or more than once, in 450 of these cases. Discussion and graphs representing measurement in fingerbreadths and centimeters in 84 cases constitute the text of our original article. Reference to the records of the remaining 366 cases reveals that in these cases 458 measurements in centimeters of the diameter of the right lobe of the liver, and 512 measurements in fingerbreadths of the projection of the right lobe below the costal margin have been made.

The following tables show the frequency of the various measurements and the percentage of those within normal limits and of those larger than normal:

Measurement of the Right Lobe of the Liver in the Right Midclavicular Line, Expressed in Centimeters

	No. of Measurements	Per Cent
14.5 cms. and less than 14.5 cms.	29	6.33
15 cms. and 15.5 cms.	22	4.80
16 cms. and 16.5 cms.	27	5.90
17 cms. and 17.5 cms.	42	9.17
18 cms. and 18.5 cms.	46	10.04
19 cms. and 19.5 cms.	51	11.14
20 cms. and 20.5 cms.	66	14.41
21 cms. and 21.5 cms.	55	12.01
22 cms. and 22.5 cms.	52	11.35
23 cms. and 23.5 cms.	30	6.55
24 cms. and 24.5 cms.	19	4.15
25 cms. to 27.5 cms.	19	4.15
Total measurements in centimeters	458	100.00

Measurement of the Lower Edge of the Right Lobe of the Liver in the Midclavicular Line, Expressed in Fingerbreadths

	No. of Measurements	Per Cent
At the costal margin or barely palpable	60	11.72
1 fingerbreadth or 1.5 fingerbreadths below the costal margin	100	19.53
2 and 2.5 fingerbreadths below	115	22.46
3 and 3.5 fingerbreadths below	172	33.59
4 and 4.5 fingerbreadths below	54	10.55
5 and 6 fingerbreadths below	11	2.15
Total measurements in fingerbreadths	512	100.00

The cases in this study include both sexes, and both children and adults.

The number of cases given is exclusive, with very few exceptions, of those seen in the University of California Infirmary in the years 1919, 1920, 1921, 1922, and half of 1923. It is also exclusive, with a few exceptions, of patients with amebic infection seen in two years' service in the Alameda County Hospital at Fairmont. It is also exclusive of all cases, with one or two exceptions, seen in the Caribbean countries, and is exclusive of those seen in Liverpool and London. It does *not* include clinical and therapeutic positives.

Acknowledgment in these studies is due C. A. Kofoid, Ph. D., Sc. D., and Olive Swezy, Ph. D., of the University of California.

VACCINATION FOR SMALLPOX—THE THREE-POINT CHISEL METHOD*

By George M. Stevens, M. D.
Los Angeles

Discussion *by J. C. Geiger, M. D., San Francisco; John J. Sippy, M. D., Stockton; Alex M. Lesem, M. D., San Diego.*

In August, 1911, Dr. John Force began vaccinating the entering students of the University of California at Berkeley with a dental scaling chisel held perpendicularly to the skin, denuding the epiderm by rotation of the chisel. In this manner three circles of epidermis, two millimeters in diameter, were removed, glycerinized vaccine was then applied to the three denuded surfaces and rubbed gently in. The resultant vesicles were remarkably uniform.

In a series of 111 "takes," measured on the seventh day after the vaccination, the mean diameter was 7.6 millimeters, and the standard deviation was 0.7 millimeters, whereas in a series of 133 vaccinated by the multiple pressure method, the mean vesicle measured 9.3 millimeters, with a standard deviation of 1.4 millimeters. The scars resulting from the chisel method were uniformly circular and approximated 10 millimeters in diameter.

Doctor Force demonstrated this vaccination method to Dr. Frank Kelly and to Dr. A. F. Gillihan, and they used it in their work with the State Board of Health. Dr. Gavin Telfer of the State Board of Health also became familiar with the procedure and recommended it to Dr. William Jeter of our vaccination room as a great improvement over our single-puncture method, then in use.

Doctor Jeter started to use this triple method in the year 1924 and soon became very enthusiastic as to its advantages, claiming that the reactions obtained were far less severe and that the average length of time for healing was cut in two; for on an average only three weeks for healing was required where formerly, by the one-puncture method, the average had been six weeks.

He also found that he could discard his stick of lunar caustic, as by the new method no proud flesh or slough formed after the reaction.

When he told me about the results, I did not believe such an improvement in method could be possible, so I spent a month in the vaccination room to observe, finally becoming convinced of the great advantages of the three-point chisel method.

TECHNIQUE

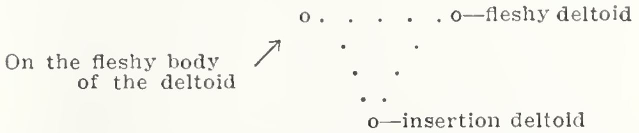
Vaccination is to be looked upon as a surgical procedure and carried out with all the precautions necessary for the prevention of septic infections. Especially must the physician carefully consider the cleanliness of his person, his hands, the instruments, and the place of operation. Aseptic surgical technique in all that the words imply must be the rule.

THE SET-UP

Rotary chisel (2½ millimeters, Cutter Laboratory, Berkeley).
Sealed capillary vaccine tubes just out of the refrigerator.
Rubber bulbs for same.
Sterile gauze squares for dressings.
Absorbent cotton.
Acetone for washing arms.
Burning alcohol.
Alcohol lamp.
Zinc oxid rubber tape.
Scissors.
Sterile gown.

The blade of the rotary chisel (2½ millimeters) is dipped in 98 per cent alcohol and immediately flamed in flame of alcohol lamp before use on each different person. It may be laid over flat tape spool to cool, blade extended over the edge. The insertion of the deltoid muscle a little to the outer side of the upper arm is selected for the first puncture. The skin is made tense by grasping the inner side of the arm with the left hand, and just enough pressure and twisting (rotary) motion of the chisel is exerted to remove the epiderm. It is important that the abrasion be not too deep, and skidding of the chisel should be avoided. The drawing of blood is also to be avoided, as it may float away the lymph and prevent absorption. Deep scarification is more likely to be followed by an excessive inflammatory reaction.[1]

It is not desirable to abrade deeper than is necessary to see the little reddish points which represents the loops of the capillary blood vessels.[1] The other two denudations are made in the same manner and with the same care above the insertion of the deltoid.



Denudations should never be less than one inch (2½ to 3 centimeters) apart and preferably an inch and a half apart (3½ to 4 centimeters).

The ends of the sealed capillary glass tubes are then broken off (aseptically) and by pressure on the bulb the vaccine is deposited in equal amounts on the three denuded surfaces. With the cooled flat side of the chisel held horizontally, the virus is rubbed gently and carefully into the denuded surfaces. It is our custom to immediately cover the lesions with a loosely fitting square pad of several layers of sterile gauze; a couple of quarter-inch zinc oxid adhesive tapes are applied loosely, but the ends of these should never come together around the underside of the arm. Celluloid shields or other types of dressings are never used. All peripheral pressure or suction is to be avoided.

The chisel with a 2½ millimeter edge is a little safer to use than the one with a 2 millimeter edge. There is a great difference in different persons as to thickness of epiderm, so sharpness of chisel, the amount of pressure, length of rotation, are factors for personal judgment of the physician.

Care must be taken that the chisel blade is not overheated when the vaccine is rubbed in, as otherwise the vaccine will be killed and will not take. On this account some prefer to use a sterile toothpick, or use two blades and alternate their use.

---

* From the Division of Epidemiology of the Los Angeles City Health Department.

"Some writers have advocated vaccination by hypodermic or, rather, intradermal puncture. The alleged advantage that little or no scar results is, in reality, a disadvantage, for the presence of the scar and its character constitute, as a rule, visible evidence of the amount of protection against smallpox." [1]

"It is chiefly on account of the great diagnostic value of the vesicle and scar that subcutaneous methods of vaccination are not to be commended." [2]

Again, to quote Osler: "The best indices of the efficacy of vaccination are the course of the vesicle, the general symptoms, and the scar. Ultimately we may learn more exact guides to the immunizing power of vaccine, but at present we can only say that if the vesicle and scar are characteristic, there is more or less immunity."

"Small insertions are insisted upon because the diameter of the lesion (and the depth of the take [4]) is dependent upon the area of the insertion, and the rapidity of the healing is dependent upon the size (and depth [4]) of the lesion." [3]

POINTS IN FAVOR OF THE THREE-POINT CHISEL DENUDATIONS (TRIANGLE FORM)

1. Chances of a take are increased threefold: of great advantage in health department work, both in contacts where every minute counts in getting protection, and also in those instances where it is almost impossible to get people to return in case of failure of take.

2. Local reactions are less severe, as the load is distributed to three areas instead of one.

3. Rotundity of vesicle and of scar tissue are insured; the vesicle, not breaking so easily, does not stick to a gauze dressing so readily.

4. The pitted scar area left conforms to the recommendations of the Local Government Board of England.[2]

5. Reactions of immunity are just as easily read.

6. If the three insertions all take, the surface area of the takes and the depth takes are each only one-third as great as a one-point insertion.

7. No sloughing, no caustic.

8. The danger of secondary infection greatly reduced.

9. Scabs come off on an average in three weeks instead of six weeks.

10. Dressings and after-care are reduced one-half.

11. A reduction of at least two-thirds in the number of cases where axillary lymph glands become involved. A glance at your "Gray's Anatomy," to the picture showing the distribution of the lymphatics of the arm and axillary region, will show you why the load is split up and not all put on one lymph drain.

12. Particularly adapted to health department work on account of its simplicity, rapidity of operation, ease of aseptic surgical technique; assured protection against smallpox; and beautiful scars (not unsightly) characteristically pitted enough to be read for at least a period of seven years after the take.

REVACCINATION

Revaccination of those who have an old pitted scar should be done every seven years. Fifty per cent or more of these will show an immunity reaction. It is not as essential to use the three-point method, as takes practically never react as strongly in those who have had a former take. A good plan, however, is to use the triangle method as usual, using two points of denudation for control observations and one denudation for the insertion of the vaccine. In this way very accurate data can be obtained on immunity.

AFTER-CARE

Vaccination must be treated as a surgical condition from start to finish, and only when the reaction and its effects are entirely over and the skin returns to normal should care be relaxed. Secondary infection under proper technique and after-care is very rare. When it does occur, it is treated symptomatically, as surgical procedure demands.

All primary vaccinations in persons who have not recently contacted smallpox should be observed at the end of ten and fifteen days.

Revaccinations should be observed in two and four days in order to detect a possible reaction of immunity. The vaccination should be considered successful as soon as this reaction of immunity appears and begins to subside.

If no reaction of immunity appears, and if later on no vesicle appears, the vaccine has lost its potency and is at fault.

CARE OF VACCINE

Smallpox vaccine cannot be kept too cold and it must be a constant cold. It deteriorates in the ordinary icebox, and should preferably be kept in the ice-making compartment of the refrigerating machine. If a mechanical refrigeration is not available, and it has to be kept in an ordinary icebox, keep it on the ice in a metal or glass container, and not merely on a shelf. For use in the field, pack in ice, or in vacuum bottles containing shaved ice.[3]

Vaccine must be kept cold from time of manufacture until used. Never expose to body warmth or to sunlight. Even sunlight hitting the arm while vaccinating may kill its potency.

A test for full potency is that vaccine should give 50 per cent of vaccinoid reactions in the group of persons vaccinated successfully more than ten years previously.[3]

COMMENT

"The three-insertion triangle" method of vaccination has been in constant and very nearly exclusive use in the Los Angeles City Health Department since 1924. We estimate that 75,000 vaccinations have thus been performed with far less effort, work, and worry, with a halving of after-care and dressings, at considerably less expense than from other methods by a technique that seems in every way to fill the requirements of Public Health work. The only objection set forth by the uninitiated seeking vaccination has been the fear of producing large unsightly scars. The uniformly rotund, slightly pitted scars obtained in almost every instance has now gone far to quiet such fears.

116 Temple Street.

REFERENCES

1. Schamberg, Frank J. Nelson Loose Leaf Medicine.

2. Dock, George: Osler's Modern Medicine, 1907 edition.

3. Leake, James P., and Force, John M.: The Essentials of Smallpox Vaccination, Public Health Reports, Vol. 45, No. 46, p. 2793. Issued November 14, 1930. (This article is a revision of reprint 686, United States Treasury Department, Public Health Service.)

4. Observation by G. M. S.

DISCUSSION

J. C. Geiger, M. D. (Director of Public Health, San Francisco).—There is little to be added to Doctor Stevens' presentation of the procedures and advantages of the three-point chisel method of vaccination against smallpox, as developed by Doctor Force of the University of California and practiced rather extensively at the present time. The method is excellent, and has definite advantages over certain other methods, as Doctor Stevens has pointed out.

Another method which might very well be mentioned is that popularly known as the multiple point pressure method, as recommended by the United States Public Health Service. The results of this method, in which there are made, in a small area (of 5 to 7 millimeters in diameter), with a tangentially held sterile needle, a number of punctate abrasions in the upper layers of the epidermis, are likewise highly satisfactory. Indeed, many of the advantages of one method may be credited also to the other.

However, my only purpose in mentioning this other method, and the only comment I have to make on Doctor Stevens' paper, lies in the emphasis that should be made on progressive methods. Vaccination against smallpox has been known and practiced for many years. It is true that we see the large deeply pitted scar less frequently now than we did formerly, but there still occur instances in which this simple procedure, which should cause but a minimum amount of inconvenience and heal without complication, progresses to secondarily infected ulceration, lymphangitis, etc. If the method of vaccination were intelligently carried out in all instances, as it should be, in keeping with the viewpoint that the procedure is really surgical, even with a minimum of follow-up, these complications can be avoided. Doctor Stevens' paper definitely states that the Los Angeles Department of Public Health has accomplished this goal during the period of time that the three-point chisel method has been used.

Progress includes improvement in procedures and methods. We must take cognizance of these, even in those long-established and too frequently taken-for-granted activities in public health, as well as medical and surgical practice.

⁂

John J. Sippy, M. D. (District Health Officer, Stockton).—I commend Doctor Stevens for his description of a procedure which, while perhaps not so apt to engage attention as a rare surgical operation, is of more practical value to the everyday practitioner, and which if followed will induce more persons to accept the benefits of preventive medicine.

In our work in San Joaquin County, we have used the chisel method exclusively. One of the greatest deterrents to universal acceptance of vaccination is dread of unsightly scars. For this reason we use only one scarification instead of three, except in case of smallpox contacts in whom, because of insufficient time for revaccination, we wish to insure a "take." Our experience with both mild and virulent smallpox indicates that immunity conferred by the one-point inoculation is as efficacious as the three-point method.

In girls the site selected for vaccination is the supraspinous scapular area, so that the resultant scar may be hidden under the shoulder straps of dresses. Rarely, with the chisel method, is the scar at all objectionable. Unfortunately, I know of no way to predict the occurrence of keloids, and we have had a few to result. In young children of both sexes, who may scratch the vesicle and thus produce multiple vaccinia, the shoulder site has an advantage of inaccessibility. It is freer from muscle play and clothing friction and, despite possibility of rupturing the vesicle while asleep, this occurs infrequently. We refuse to do leg vaccinations, and I should be interested to hear Doctor Stevens' comment on this latter procedure.

We use bulk vaccine, applied with sterile toothpicks. Careful technique prevents contamination, and we believe our percentage of "takes," which in ordinary routine reaches 98 to 99 per cent, is higher than with the capillary tubes of glycerinated virus.

By way of after-care, we apply no dressings. In a number of instances where patients applied adhesive tape, the irritation and thinning of epidermis produced by the tape has led to widened vesicles or multiple takes and objectionable length of time in healing. Patients with rough or soiled clothing are advised to pin a few layers of clean gauze to the clothing so as to protect the vesicle.

In a series of 38,000 vaccinations we have had no infection, cellulitis, or lymphangitis attributable to this lack of dressing, and it seems to shorten the time of healing. If unusual itching or edema occurs, we advise alcohol to bathe the area around the vesicle or the application of a thin layer of gauze in which an opening is made for the vesicle, and kept moist with alcohol.

Patients are advised to be revaccinated every five years. In no case where this advice is followed have we secured a vesicle, but only an immune reaction. Revaccinations of service men almost all result in immune reactions or rarely in a vaccinoid papule, but not a true vesicle. This would indicate that immunity obtained from a successful vaccination in the vast majority of persons lasts for many more years than five or seven. In fact, although I advise revaccination, I never worry about the occurrence of smallpox in a contact of mild or alastrim type of the disease if he has been successfully vaccinated within his lifetime.

⁂

Alex M. Lesem, M. D. (739 Fourth Avenue, San Diego).—During the year 1924 there occurred in the city of San Diego 426 cases of smallpox. Since 1924 more than 50,000 persons in San Diego County have been vaccinated by the Health Department against smallpox. The technique used in the work is essentially the same as that outlined by Doctor Stevens, with some slight changes which were deemed advisable in order to speed up the work, since large groups of children were being vaccinated in the schools.

The three-point method was used by this department for three years, but upon request of the parents who objected, particularly in the case of little girls, that the three scars were unsightly, the Health Department discontinued the use of three separate scarifications, and at the present time is using only one. Individual sealed capillary glass tubes are used instead of the bulk vaccine, for the reason that there is more danger of contaminating the bulk vaccine.

The vaccine is first deposited on the arm and then the scarification is made for the reason that it is easier to see the drop of vaccine than it is to see the scarification, particularly when the operator is working in a poorly lighted room.

It is deemed advisable in the vaccination of school children who are very active on the playground to cover the vaccination with sterile gauze, square, securely fastened with adhesive, with particular care being taken not to encircle the arm. The method used by this department is very rapid. School children are brought to the vaccination table and kept in line; the arm is scrubbed with ether by a nurse; the child is vaccinated by a physician; and the bandage is placed on the arm by the second nurse. Between four and five hundred children may be vaccinated in a forenoon by one physician, with the minimum disruption of class routine.

Out of more than 50,000 vaccinations in which this method was employed, only one case had a severe secondary infection, but with complete recovery and no ill effects.

In conclusion, I wish to state that I prefer the scarification method for group work in preference to all other types of vaccination, and that the single scarification does not produce a scar different from multiple scarification.

* * *

Doctor Stevens (Closing).—A good method that meets the need of the private doctor may not be best suited for the use of a health department in a large city where epidemic and endemic smallpox have to be combated by a rather large number of different vaccinators. Here it is imperative to get immediate takes with safety. Here, too, a uniform method is highly desirable. The only objection is the number of scars. If carefully done, these will not be unsightly. I have had no experience in inserting the vaccine in the scapulary supraspinous region as advocated by Doctor Sippy, but do not see the contraindications that are so apparent when vaccinations are applied to the legs.

FRACTURES OF THE SPINE[*]

By James T. Watkins, M. D.
San Francisco

Discussion *by Rodney F. Atsatt, M. D., Santa Barbara; John C. Wilson, M. D., Los Angeles.*

At the Lane Library lately, for the purposes of this paper, I looked over the literature for the past ten years dealing with fractures of the spine, uncomplicated by cord injuries. From these reports in English, French and German, and covering well over a thousand fractured spines, it is apparent that such fractures are common injuries; that fully half of them are simple compression fractures; that, except where an x-ray, and notably a lateral x-ray, is employed, they are all too frequently not recognized at the time of injury; that they constitute a heavy burden upon insurance carriers, and therefore, ultimately, upon industry; that if unrecognized, or inadequately treated, they may result in serious impairment of function; that this loss of function is usually not the result of injury to the vertebral body, but is the result of distorted bodily mechanics, *i. e.,* of bad posture and of involuntary efforts at correcting that posture. And this bad posture is the result of change in the mutual relations of the planes of the upper and lower surfaces of the bodies of the injured vertebrae.

In the time at my disposal I cannot possibly cover all types of spinal injury, so I shall confine my remarks to those which compose the majority, actually some 80 per cent, of such fractures.

INCIDENCE

A large majority of such fractures occur in adult males, although since the advent of the automobile, women are increasingly acquiring their quota, at present about 15 per cent. Of these simple compression fractures it is estimated that nearly 80 per cent occur between the eleventh dorsal and second lumbar vertebrae, inclusive; and of these nearly half involve the first lumbar vertebra. These 80 per cent, then, are the subject of this paper.

COMPLICATIONS

These are neurologic symptoms, and fractures of laminae of articular processes of the pedicles and spinous and transverse processes. Aside from the neurologic conditions, fractures of the articular processes are the most troublesome. Finally, injuries elsewhere, notably of the os calcis, may occur; and, in the presence of the graver injury, may be overlooked.

CAUSATION

Any condition or situation which will cause a hyperflexion of the spine, such as blows—actually thrusts—from above and behind, and falls in which the individual lands standing or sitting. Even sudden muscular contractions would appear to be capable of producing compression fractures. Doctor Wesson, who is with us today, sustained such a fracture.

Mechanism.—Crushing of the spongiosa of the anterior portion of the body of one or more vertebrae. I shall not touch on complicating dislocation, though they are probably the result of a diagonal thrust rather than of a simple downward and forward crush.

SYMPTOMS

In an admirable paper by Osgood, one of the many which I consulted in preparing this address, these are divided into early and late symptoms.

Early Symptoms.—At first, these may be masked by those of other fractures or by shock. In a medico-legal case in which I figured lately, with multiple fractures of the extremities, two compressions of the vertebrae were not discovered until nearly a year after the accident. Again, they may be so slight as to escape notice. Of these early symptoms, muscle spasm, with localized limitation of back motion, is *always* present. Tenderness to direct pressure over the spinous processes of the injured vertebrae is *almost* always present. Pain, definitely localized, may be present, but is sometimes absent. In all the cases that I have seen, there has invariably been a fairly localized feeling of weakness, however, even when actual pain was absent. Finally, very frequently marked distention of the abdomen may be a distressing symptom.[1]

---

[*] Read at the twenty-ninth annual meeting of the Nevada State Medical Association, Reno, Nevada, September 23-24, 1932.

[1] In the discussion elicited by this paper, Doctor Holcomb of Oakland directed attention to this very distressing abdominal distension which frequently accompanies spinal fractures, which I had included in my notes but failed to mention.

Late Symptoms.—Many years ago (on July 3, 1893, I think), Kümmel reported to the surgical society of Hamburg what he believed to be a rarefying osteitis of the spine (of traumatic origin) which presented three stages: (1) A stage of acute injury; (2) a stage of apparent convalescence; and (3) a stage in which there was a slowly developing kyphos and pain in the distribution of the nerves emerging from the spinal foramina at the site of injury. I recall this observation: Die Behandlung ist eine sehr dankbare—"The treatment is very gratifying." He got his patients well with plaster of paris jackets. This occurred in the year before Roentgen of Würzburg discovered the x-ray, and many years before lateral spinal pictures had become possible. I believe Kümmel was reporting what was really a series of unrecognized compression fractures; I have never seen a definite pathologic entity such as Kümmel, basing his opinion on his clinical findings, described.

DIAGNOSIS

"The key to diagnosis is suspicion." Every patient who has been forcibly doubled up, who has fallen a great distance, landing on his feet or on his buttocks, has a broken back until you have proved that he has not.

TREATMENT

Except in the matter of the Kümmel spine, where I am afraid I stand alone, there is no material divergence of opinion from what I have said among the many authorities I have consulted. In the matter of treatment, however, there is no such thing as unanimity of opinion. On the extremely conservative end we find surgeons who place their patients on firm beds, massage the back musculature, beginning with the fourth day following the accident; sit the patients up at the end of four weeks, and get them out of bed at the end of eight weeks. They never use plaster jackets nor braces. The number and excellence of the results they report is impressive. At the extreme of the swing of the pendulum to its radical end, we find surgeons who regularly fuse every spinal fracture. They are satisfied with their results, or they would not do it; but, on the other hand, in reviewing operative results, we find Eikenbarry of Seattle, who, among 128 claimants who had been subjected to spinal fusion, did not find one who had returned to his original occupation; and Gray of the Aetna Company, who had not seen a single individual whose spine had been subjected to operation who had not become a "life pensioner."

How can we explain these diametrically opposed methods of treatment employed by able and just men who are so convinced they are right that they make permanent record of their procedures and of their results? It must be that one or the other group, or both, lacks the faculty of judicially reviewing its own work. It must be that either one group or both are open to the criticism voiced by Sir James MacKenzie: that for them "a lack of guiding principles is responsible for (many) haphazard methods, and the result is, too often, that, though immense energy is expended, achievement is not commensurate with this 'expense.' "

Are there then any guiding principles applicable to the treatment of uncomplicated spinal fractures? I believe there are, and I further believe that they are the same broad, now universally accepted, principles which apply to the treatment of fractures elsewhere in the body. Let us try to enumerate them.

First, following any fracture of any bone, we bring the fractured ends into alignment and apposition and immobilize them.

Second, if a fracture enters into a joint, other things being equal, we immobilize that joint in that position most difficult for it in health to assume: abduction and elevation at the shoulder, full flexion at the elbow, full supination at the ankle, abduction and internal rotation at the hip, and so on. The knee would seem to be an exception to this rule.

Third, if a bone is impacted (a Colles's at the wrist, a femoral neck, or the upper end of the humerus), other things being equal, we disimpact it and then proceed in the usual way.

Fourth, if there is danger of ankylosis of a fractured joint, we immobilize in that position which will give a maximum of function should the ankylosis become a fact. Now, if these fundamental or basic principles of treatment are true of all other bones and joints, they should be equally true of the multiple bones and joints which, in their totality constitute the spinal column; bones which, because of their cancelous structure ought, *a priori,* to heal quickly and which, as a matter of fact, do heal quickly if given favorable opportunity to do so. The application to fractures of the spine of these fundamental principles underlying all bone setting constitutes my idea of proper treatment.

We noted, a moment ago, that aside from occasional nerve-root pains, the disability following a healed spinal fracture lies, not in the fracture itself, but in the uninjured portions of the column in which, in order to counterbalance the distortion caused by the cave-in of the anterior portion of a vertebra, compensatory curves are developed.

The reasons for these pains are found in the constriction of the vertebrae themselves, and notably in their articular and spinous processes. For, while they have the general configuration given in the descriptive anatomies, a more detailed study of vertebrae of a number of spinal columns will show that their articulations and processes apparently present endless individual variations in length, in pitch, in direction, etc. Indeed, I think it might be said that, just as our faces differ in detail, so, when we study them long enough, our spinal columns equally differ. But, while the still plastic spine of the growing child would seem to be capable of a considerable degree of accommodative readjustment, the same observation would not hold equally good of the spine which had attained to maturity. Nor, by the wildest stretch of the imagination, could Wolff's law be made to apply to the matter in hand.

Consequently, when by reason of the collapse of the front part of, say the second lumbar vertebra, the vertebrae above and below it meet at an angle of perhaps forty-five degrees, the compensatory lordosis above and below the fracture results in the body weight being removed in large part from the intervertebral disks, where it belongs; and transferred back to the articulations, laminae and spines, with resultant multiple sprains and ultimate chronic traumatic arthritis. The problem is even more complex than that; but what I have said is enough to indicate that to leave such a spine in that condition is to court grave disability.

But, to revert for a moment to the two extremes of treatment, I do not see, on the one hand, how the synostosing by operation of a few vertebral spines meets the mechanical problem involved; any more than, on the other hand, letting the patient with a deformed spine lie in bed till he is ready to get up, meets it. I believe we should follow the four cardinal principles of treatment already enunciated: that we should disimpact, remove the deforming factor of weight bearing, and maintain the posture most difficult in health to assume; which, in this case, is the posture in which, should ankylosis supervene, a maximum of function will be retained. This may be accomplished in several ways. Dr. John Dunlop of Pasadena places his patients prone, and practically "tosses them in a blanket." He reports an impressive list of cures. Doctor Rogers of Boston has devised a form of bed upon which the patients lie supine in hyperextension. By means of an attachment, a direct upward (that is corrective) thrust is exerted upon the kyphos and gradually increased till the latter is obliterated. Some years ago I tried to do the same thing with kyphosis secondary to tuberculosis; but I gave it up because the skin gave way before the kyphosis did.[3]

An objection, which, so far as I know, is hypothetical, has been made to the direct attack on the kyphos on the ground that an unrecognized fracture of a lamina, if pressed upon, might result in a fragment of bone being forced into the spinal canal. In view of the firm ligamentous anchors above and below such a lamina, such an argument does not impress me. However, it may be guarded against by taking 67½ degree lateral pictures of the spine; these throw the pedicles, laminae and articulations directly upon the plate, making injuries of them as easy to recognize as similar injuries elsewhere. I have nothing to say against other methods of procedure; but my personal predilection is for the immediate correction of the kyphos. Instead of Doctor Dunlop's blanket tossing, I place the patient prone upon two padded boxes, while assistants make moderate traction on head, arms, and legs. Then, astride of the patient, with my arms held stiffly, I place my hands at either side of the kyphos and, bending my knees, I gradually force the spine into hyperextension till I get a distinct crunch: I feel it and I hear it. My kyphos is then completely gone; I leave no trace of it. I know from my x-ray that my laminae are intact, and I could not push them in anyhow because my thrust is not exerted directly upon the laminae. Without moving the patient, I now pad generously, and over it apply the longest plaster of paris jacket I can, and fill in the hollows with reduplications of plaster of paris bandage. I have never carried the cast down to the knees, though I have read that I should do so.

AFTER-CARE

If there are no contraindications, beginning with the sixth day, I bivalve the cast, remove the posterior half, and try to anticipate muscle atrophy with massage and baking. If spots of tenderness are noted, after covering the skin with paraffin oil, they are carefully palpated to determine their nature. Should there prove to be sensitive pencil-like indurations in the course of the muscle fibers (the Muskelhärtungen of the Germans) they are worked on with increasing vigor until they disappear. And as soon as soreness has subsided I advise supervised efforts at contracting the back musculature. I feel very strongly that our efforts should be directed toward preventing the atrophy of disuse, rather than toward relieving it once we have allowed it to occur.

I have heard of cases where vertebral distortions which had been corrected had recurred. I believe this was to be attributed (1) to failure to care for the back muscles—the natural braces of the vertebral column—and (2) to allowing patients to sit up; a sitting patient, jacket or no jacket, flattens his lumbar spine. To verify this, apply a packet, cut a hole in it, and watch what happens when the patient sits down: flattening the lumbar spine throws the body weight forward upon the still ununited portion of the vertebral body.

By the time such a person is ready to stand up, he has a firm musculature and is habituated to a correct posture. In the early stages of convalescence, recumbency, with the spine supported in the posture it would assume while standing erect, is indicated. After eight weeks of such recumbency the patient may be got up, standing or walking around for short but gradually increasing intervals of time. Only after the sixteenth week should he be permitted to sit with a flat back.

CONCERNING SUPPORTS

I believe that as we come to recognize and to perfect the technique based upon the principles of treatment here set forth, we will more and more get away from external supports of any sort. The more intelligent and coöperative the patient, the greater will be our success in employing the nonbrace, noncast treatment, as some of the Germans are doing now. Thus far I have not had the courage wholly to do without them myself. If one is going to use an external support, the brace affords much better fixation of the spine than does the plaster of Paris or similar jacket; but by reason of the direct pressure it exerts, it is correspondingly more mischievous in its effect on the erector musculature.

---

[3] In the discussion, Doctor Holcomb of Oakland advocated making traction on head and feet and, at the same time, exerting an upward lift on the kyphos by means of a flannel bandage passed beneath it and up over the longitudinal bars of a Balkan frame.

CONCERNING THE INDICATIONS FOR OPERATION

In the fresh spinal fracture where there is an increasing paralysis, straighten the spine and decompress by doing a laminectomy; but do not open the dura. In an old unrecognized or inadequately treated case with nerve root symptoms and possibly fractured articular facets, but without a generally disseminated arthritis, synostose the damaged vertebra to the uninjured vertebrae immediately above and immediately below it. To do more than this implies still further limiting the motion in a spine whose motion is already unduly limited.

THE TIME OF DISABILITY

In an uncomplicated case this should not be more than six months. I had one synostosed patient back at work, wearing a jacket, at the end of six weeks. Actually, our industrial cases average a year and a half. The late Doctor Hibbs wrote me that in adults synostosing operations should be followed by six to nine months' brace treatment, and that children took from nine months to a year.

Until comparatively lately I had adhered to the radical or operative school. The failure of patients to declare themselves relieved of their disabilities I interpreted to be one of the evils inseparable from compensation insurance. I now incline to hope that a more rational treatment will give a quicker and more nearly complete return to normal.

Medical Building, Hyde and Bush Streets.

DISCUSSION

Rodney F. Atsatt, M. D. (1421 State Street, Santa Barbara).—Doctor Watkin's paper on fractured spines brings out a viewpoint with which I am fully in accord, namely, that it is possible to treat fractured spines by a noncast, nonbrace procedure and have them well and walking and in no danger of recurrence in a much shorter time than is possible with the brace treatment. I personally have treated forty fractures in various portions of the spinal column in the following manner:

The patient is placed on a hyperextension bed, somewhat modified from that described by Doctor Rogers, for a period of eight to ten weeks; active exercises for the arms, legs, and back are begun at the end of the fourth week, though simple anterior tibial and quadriceps setting exercises may have started at once. During the period from four to eight weeks the strenuousness of the hyperextension exercises is increased, until at the end of eight to ten weeks the patient is able to stand and walk with strong, corded erector spinae muscles which act as the body's most efficient brace. I am very glad to hear someone else advocate this form of treatment, as opposed to the more radical procedures. I should like to agree with Doctor Holcomb that there is very apt to supervene, in fractures of the lower dorsal and lumbar spine, a very distressing paralytic ileus which is often difficult to relieve but can sometimes be helped by pilocarpin and eserin.

John C. Wilson, M. D. (1136 West Sixth Street, Los Angeles).—During the past decade the great amount of careful investigation carried on abroad and in this country has led to a better understanding of the anatomy, physiology and pathological physiology of the spinal column as a functional mechanism, and has led to the evolution of a rational treatment of spinal injuries.

Goldthwaite many years ago called attention to the importance of posture in body mechanics and has repeatedly given a clear exposition of this subject. Schmorl's investigations and careful studies of the nucleus pulposus, its expansile properties and relationship to spinal mechanics; Davis' investigation of the strength of the anterior spinal ligaments, the escape of these structures from injuries in compression fractures of the spine and the absolute protection which they afford against excessive hyperextension even though the vertebral bodies adjacent to them are crushed, have led to an entirely new concept in the treatment of compression fractures of the spine.

Less than ten years ago the question which always arose in the treatment of a spinal compression fracture was whether a fusion operation should be done or the injured vertebrae should be allowed to heal through simple immobilization in the position of deformity. Everyone who has had experience through this era of treatment can well remember the results which seemed to be the same regardless of the choice of treatment. Whether operative fixation was or was not done, the patient in the majority of cases complained of weakness and backache. In retrospect, better results could not be expected from a system of treatment which ignored the physiology of the spinal column as a whole; took no consideration of the nature of the fracture and dismissed the subject of body mechanics regarding the injured as a victim of a terrible calamity which nature must repair without assistance.

With the realization that (1) compression fractures of the vertebral bodies are impacted fractures, (2) that impaction of two or more vertebral bodies alters the physiological curve in whatever region of the spinal column it may occur, (3) that an altered curve in any region of the spine interferes with general body mechanics and must be compensated for elsewhere, (4) that impacted vertebral bodies may be disimpacted and the normal or a nearly normal contour restored by hyperextension, (5) that the anterior spinal ligaments afford protection against excessive hyperextension, it becomes clear that any adequate treatment of compression fractures of the spine, as Doctor Watkin's has emphasized, must produce an anatomical restoration of contour, maintain this restoration until healing has resulted and then restore as nearly a normal range of motion as is possible to the entire spinal column and normal musculature to support it.

The armamentarium used to accomplish this; whether it be at one sitting, as advocated by Davis and by Dunlap, or is carried over a period of days, as advocated by Rogers, is a matter for the individual surgeon to decide.

The recognition of the failure of any treatment which accepts a gross distortion of the physiological contour of the spinal column and the fixation of this deformity is a real advance in therapy. With the newer forms of treatment the injured can look for a return to active life with a minimum of residual pain.

⁂

Doctor Watkins (Closing).—I have to thank the gentlemen who discussed my paper for their expressions of approbation. I had expected to have to defend my position; but am pleasantly surprised to learn that, except in minor details, we are all agreed as to the proper treatment of uncomplicated spinal fractures.

FUNCTIONAL DISEASES OF THE INTESTINAL TRACT*

By Fuller Bailey, M. D.
Salt Lake City, Utah

Discussion *by F. A. Speik, M.D., Los Angeles; Eugene S. Kilgore, M. D., San Francisco.*

From the earliest history of medicine one of the chief tools of the physician's armamentarium has been the cathartic. There are no other drugs which produce an effect so evident to the patient. Elimination in early medicine was the primary object of therapeusis as evidenced by the bleeding, sweating, and purging. We are reminded of the old saying, "I pukes 'em, I purge 'em, I sweats 'em, and if they die I lets 'em."

As a consequence of this elimination therapy, together with the growing intelligence of the public and the helpful newspaper advertisements of the patent medicine vender, this particular form of therapy has been largely removed from the physician and adopted by the layman himself.

The common cold, the stomach ache, the fever, the headache, and that tired feeling are all treated by the patient himself with that good old remedy, the cathartic. But as the layman progresses in thought, so, too, does the physician. The medical profession now realizes that infection cannot be eliminated through a bowel movement. Also that it is well to determine the most likely cause of the stomach ache before administering a cathartic.

The theory of autointoxication, which appeals so strongly to the imagination and sounds so logical, will not withstand the prying eyes of science. That now popular idea of increased pep and increased longevity through bigger and better bowel movements no longer appeals to the scientific imagination.

Be that as it may, this is the age of self-medication and it behooves physicians to open their eyes to the fact that continued medication is not good for the human race in general, nor is it necessary. It is my firm conviction that the outstanding cause of gastro-intestinal disturbance today is the frequent use of cathartics.

PHYSIOLOGY OF INTESTINAL TRACT

With this in mind, then, let us briefly review the more recent ideas of the physiology of the intestinal tract in order to better understand some of the vagaries of that complex mechanism.

The sympathetic nerve supply for the stomach and small intestines is conveyed by the splanchnic nerves originating in the lower dorsal and upper lumbar region with the cell station in the solar plexus. Balanced against this is the parasympathetic supply from the vagus.

The sympathetic nerves supplying the colon and rectum originate from the lower lumbar region with the cell station in the inferior mesenteric ganglion. The parasympathetic nerves for this area originate from the sacral cord. The vagal and sacral nerves end in ganglion cells between the circular and longitudinal muscle coats of the small and large intestine and constitute the plexus mesentericus of Auerbach.

Sympathetic or splanchnic stimulation diminishes tone and inhibits peristalsis, while parasympathetic stimulation increases tone and increases peristalsis. The balance of these two systems, one against the other, largely controls the activity of the intestine.

The types of stimuli to which these nerves respond are chemical, mechanical, nervous, and thermal.

Chemical substances circulating in the blood stream may influence the intestinal movements by stimulation of Auerbach's plexus. As an example of this we have bacterial toxins causing diarrhea. The frequent gastro-intestinal upset in children accompanying sore throat is well known by all of us. The diarrhea and intestinal disturbances accompanying la grippe or influenza are so common that the diagnosis of "intestinal flu" is frequently made, although lesions in the gastro-intestinal tract ascribable to influenza are not demonstrable.

The hormones secreted by certain glands may act similarly by stimulating Auerbach's plexus. As an example of this we have the diarrhea which frequently accompanies hyperthyroidism and the absence of stimulation giving rise to the constipation accompanying hypothyroidism. Adrenalin has an inhibitory action on Auerbach's plexus and constipation has been noted after its frequent administration.

Chemical stimulants are present in foods or result from their digestion by ferments or bacterial action in the alimentary canal. The chief foods supplying these stimulants are the fruits, vegetables, and sugars. Acetic, butyric, tartaric, citric, and lactic acids are contained in the fruits and vegetables or produced from them in their final digestion.

Mechanical stimulation of the intestinal tract occurs from the bulky residue of the food. Indigestible and undigested food remnants, such as cellulose, are the chief sources of bulk in the stool. The vegetable foods have a larger residue than the animal foods and lead to more secretion in the intestinal tract. Likewise, they favor the development of a greater number of bacteria.

Nervous stimulation originating in the brain gives rise to diarrhea, such as that following emotion or excitement. This may commonly be observed in students going to examinations or in soldiers in war. Diarrheas and intestinal upsets as a result of worry have been especially prevalent the past two years and are frequently unrecognized by physician or patient.

Reflex stimulation influencing the intestinal movements arises chiefly in the stomach and duodenum. In the normal course of digestion the food is retained in the distal ileum for one to one and one-half hours by the ileocolic sphincter, to allow for its complete digestion and absorption before the residue is allowed to pass to the colon. Distention of the stomach by a meal causes a reflex relaxation of the ileocolic sphincter, allowing the ileum to empty into the colon before the new meal arrives. This is called the gastro-ileal reflex.

---

* Read before the twenty-ninth annual session of the Nevada State Medical Association, Reno, Nevada, September 23-24, 1932.

Contrary to former teaching, the peristalsis in the colon is never vigorous under normal conditions. The greatest progress of the feces through the colon is the result of mass peristalsis following a meal. The reflex responsible for this mass peristalsis is known as the gastrocolic reflex.

Patients with intestinal disturbance frequently complain of distress such as gas, bloating, fullness or cramping immediately or shortly after meals. This distress is due to abnormal mass peristalsis in the colon and is to be distinguished from ulcer distress, which occurs one to three hours after eating.

Reflex inhibition of peristalsis occurs from stimulation of the peritoneum. Exposure of the peritoneum during laparotomy causes reflex inhibition of peristalsis. Paralysis and distention of the intestines after operation are frequently the result of reflex inhibition from handling the viscera. Reflex inhibition of peristalsis as a result of peritonitis or perforation of a viscus is nature's method of protection against spread of the infection.

The response of intestinal peristalsis to thermal stimulation is well known. Cold commonly stimulates peristalsis, such as a glass of cold water before breakfast or the morning cold shower. Heat inhibits peristalsis, probably reflexly, as evidenced by the relief of intestinal cramps or severe diarrhea by the application of heat to the abdomen.

The small intestine is the digestive organ of the body and its chief functions are the digestion and absorption of the food. The chief functions of the large intestine are the absorption of water and the elimination of the feces. The feces are discharged into the cecum in a watery suspension. The absorption of the water, with subsequent formation of the stool, takes place largely in the cecum, but is completed in the descending colon. It is abnormal to obtain succussion over any area of the colon except the cecum.

Ordinarily the entire large intestine below the splenic flexure is emptied with a bowel movement. This may be brought about in the morning by the regular habit of the individual or by some stimulation such as the activity of getting dressed, by a glass of cold water before breakfast, by breakfast itself, or by a morning smoke.

STOOL ANALYSIS

Many patients become alarmed when they believe the stool to be insufficient in amount. It is difficult to say what the quantity of the stool should be, because of individual variations. When we consider that one-third to one-half the dry weight of the stool is made up of bacteria, we realize that even a smaller amount is due to food residue.

The consistency of the stool, rather than the quantity, determines whether it is satisfactory or not. If the stool is soft and formed and there is no residual stool in the rectum on digital examination, there need be no worry about the quantity. Should the patient persist in worrying after this assurance, he may be told, as did one physician, to "be like the dog and never look behind him."

It is interesting to note that only about 5 per cent of the dry substance of meat, eggs, cereals, and white bread appears in the stool. From 15 to 20 per cent of the dry weight of vegetables appears in the stool, due to the increased amount of cellulose in them.

Very little is taught about stool analysis in our medical schools today. However, stool analysis is of the utmost importance in determining the functional integrity of the intestinal tract.

It is important to note the consistency, formation, and reaction of the stool. The presence of undigested starch, meat fibers, and fat signifies disturbance of digestion in the small intestine. Mucus is the normal secretion of the colon and if present in excess indicates abnormal activity of the mucous glands, but not necessarily from organic disease. The excessive use of enemas or cathartics may result in abnormal amounts of mucus in the stools. The presence of blood and pus signifies organic disease.

CONSTIPATION

Constipation may be defined as the passing of or accumulation of a hard and dry stool. A normal individual may have two or three bowel movements in a day or one bowel movement every two or three days. To set an arbitrary standard and try to make all individuals conform to it is not scientific. It is fair to say, however, that the average for normal individuals is one bowel movement a day. The normal stool should be of the consistency of butter at room temperature, and about the size of a banana with the peeling removed.

The fear of dire consequences if the bowels fail to move for a single day is so implanted in the minds of some individuals that they become ill from the worry of it. Physicians frequently see patients who have gone for days with no bowel movement without harmful effects. Strong records a case of a laborer, age twenty-six, who at the age of two often went three weeks without a bowel movement. The movements became less frequent and at the age of twenty-two he was having a movement about every six months. The bowel movement was attended by cramps, pain, and vomiting, and on one occasion the movement weighed forty pounds. The longest interval between bowel movements was eight months and sixteen days.

By colic constipation is understood a condition in which the passage of feces through some part of the colon is delayed, but the act of defecation is normal. This may result from deficient motor activity of the colon, due to congenitally thin musculature (rare); atrophic intestinal muscle in the aged; disturbance of muscle nutrition, as in severe anemia; or in febrile conditions, due to the bland type of diet taken and the impaired secretion of intestinal juices. It may also result from diminished activity of the reflexes. If the appetite is poor and very little is eaten, the gastro-colic and gastro-ileal reflexes are impaired. Without these reflexes there is diminution of the mass peristalsis in the colon. If the diet contains too little cellulose, there is insufficient reflex stimulation to the bowel wall and constipation results. Diminution in the reflex excitability of the colon may result from the long-continued use of strong stimulants such as cathartics.

As before stated, painful sensory stimuli, especially of the abdominal and pelvic viscera, produce reflex inhibition of the gastro-intestinal movements. As examples of this we have the distention and obstinate constipation in gall-bladder and renal colic. The constipation which so frequently accompanies an attack of peptic ulcer distress is attributable to this cause.

Spasm of the colon, as the result of lead or nicotine poisoning, irritating foods, and cathartics, may lead to interference with the passage of the feces. This condition occurs usually in the descending colon and, when present, the colon may be palpated as a contracted cord.

Inability of the rectum to empty itself leads to the accumulation of hard, dry fecal masses and difficult bowel movements. In this condition the fecal masses may be palpated in the descending colon or may be felt on rectal examination. This may result from laziness, ignorance, fear of pain on defecation, or neglect of the desire for a bowel movement. As the stool accumulates, a feeling of distress and pressure accompanies it. If neglected for long, diarrhea with fecal incontinence may result.

Having considered the various causes of constipation, let me emphatically state that the average patient complaining of constipation does not know the meaning of the word. When asked what he means by constipation, almost regularly he states that his bowels will not move without a cathartic. When asked how long it has been since he had a hard and dry stool, the regular reply is, "Oh, I never let myself get that way." The very suggestion of stopping the cathartics strikes fear to his heart—the fear of headaches, of biliousness, of dullness of mind, of intoxication. So thoroughly has the idea of intoxication as a result of missing a bowel movement been implanted, that he has never given his bowels the opportunity to move of their own accord. It becomes, therefore, the duty of the physician to relieve the patient's mind of these false ideas by logical explanation if he wishes to receive full coöperation in overcoming the constipation.

INTESTINAL INTOXICATION

Let us for a moment look critically at this problem of intestinal intoxication. It is known that if the small intestine is obstructed in the upper part, severe symptoms of intoxication set in and death results in a few days if it is not relieved. In these cases a proteose has been isolated from the contents of the small intestine which is not present in the normal bowel. When injected intravenously in animals, this proteose produces severe and fatal intoxication with vomiting, prostration, and bloody diarrhea. Given by mouth, however, this substance produces no symptoms and is excreted unchanged in the feces. This experiment proves that the intestinal mucous membrane is impervious to the proteose and suggests that the poison is formed in the mucous membrane itself, some of it passing directly into the blood stream and producing the symptoms.

If the terminal ileum is anastomosed to the rectum and the intervening isolated portion of the colon is closed, no evidence of intoxication appears. Later the closed colon is found filled with a mass having the appearance of normal feces. No toxic proteose can be extracted from this fecal content, showing that the toxic body appears to develop in the small intestine only.

These experiments demonstrate that poisons may be generated in the small intestine in cases of obstruction which when absorbed cause symptoms of intoxication. It is also recognized that numerous bacteria normally inhabit man's intestinal canal, which, under certain conditions, can produce disease.

To prove the theory of intestinal intoxication from constipation, however, it must be shown that a toxin is formed by bacterial or enzyme action in the colon and in amounts sufficient to produce poisoning. It must be shown that this toxin can be absorbed through the intestinal mucous membrane and that it is not broken down into harmless bodies in the liver or elsewhere. Furthermore, it must be demonstrated that repeated injection of this toxin into the blood stream will produce symptoms similar to those of constipation. It is only necessary to define these criteria to show how far the theory is from proof.

In considering the possible causes of poisoning, there is no evidence that the products of normal digestion produce poisonous effects. Nor is there strong evidence that a high protein diet is harmful. The Eskimos eat eight pounds of meat or more daily during the whaling season and are said to be a healthy race.

The products of fermentation of carbohydrates tend rather to cause diarrhea than constipation, and the fermentative type of stool is rare in the truly constipated individual.

As a result of putrefaction in the colon poisonous bodies as indol, phenol and skatol are formed. These are absorbed to some extent and excreted in the urine conjugated with sulphate. The feces normally contain about 60 milligrams of indol per 100 grams of fresh feces. In normal individuals from 6 to 20 milligrams of indol in the form of indican is excreted in the urine daily, showing that relatively little absorption of indol occurs. Retention of feces for days or weeks does not necessarily increase the urinary indican excretion. Large amounts of indican in the urine may occur in liver disease, in renal insufficiency, and in normal individuals. It would seem, then, that urinary indican is not a precise index of intestinal putrefaction. One gram of indol, more than is ever found in the intestine, has been given by mouth to man without ill effect. Two grams when given by mouth are said to produce headache, dizziness, and fatigue.

The blood phenol averages 5 milligrams per cent and is not definitely increased in any disease.

Bacteria are extremely numerous in the terminal ileum and ascending colon where the bowel contents are liquid and form a suitable culture media. In the distal colon, owing to a drying up of the feces, these bacteria tend to die. The intestinal flora are fairly constant in make-up and are probably useful to the host in keeping out harmful bacteria. None of those commonly found form soluble toxins and few of them undergo dissolution to form endotoxins. It is recognized that toxic absorption occurs much more readily from fluid feces than from hard and dried material. It is therefore quite possible that purgation, by keeping the feces in the entire canal fluid, may be more harmful than the constipation itself.

As to the absorption of living bacteria from the intestinal tract, Adami showed that cultures of intestinal bacteria may be obtained from lymph nodes of the alimentary tract of normal animals and that these bacteria may often be found in other organs. These organisms may pass by way of the lymphatics to the blood stream but do not accumulate, as they are destroyed by the liver and spleen. It is conceivable that under certain conditions bacteria may be absorbed in excessive numbers. They may collect in various situations where they are broken down liberating toxins which tend to damage the organ. It has been suggested that types of arthritis may thus result from what Adami calls subinfection. Rosenow suggests that organisms of very low virulence may actually grow in the invaded sites as a latent infection.

It is therefore clear that the evidence for intoxication from toxins or bacteria absorbed from the intestine in cases of constipation is slight. It is possible, however, that such absorption may occur more readily if the intestinal mucosa is abnormal. Starvation and purgation are said to facilitate the passage of bacteria through the intestinal mucous membrane.

MECHANICAL AND REFLEX FACTORS

Let us consider the possibility of mechanical or reflex effects in the production of symptoms of constipation.

Donaldson, experimenting with normal men whose bowels moved once or twice daily, fed a normal diet and had them withhold defecation for ninety hours. Each developed symptoms regarded as characteristic of intestinal intoxication: foul breath, furred tongue, impaired appetite, flatulence, nausea, depression, restlessness, headache, insomnia, and irritability. X-ray showed the ileum to be empty and that the feces had accumulated in the colon. After an enema and evacuation of the bowels the distress was promptly relieved and the subjects felt normal within an hour. This short period of recovery is conclusive evidence that the symptoms were not the result of intoxication through the blood stream, as a toxin could not be eliminated so rapidly. The mechanical distention of the rectum in all probability produces the symptoms reflexly, as the same symptoms may be produced by packing the rectum with cotton or wool.

Sensory impulses from the bowel are well known to influence the emotions and mental processes, such as sleepiness after a large meal, irritability and lack of concentration when hungry. Also the type of patient who is subject to the so-called "autointoxication" is usually keenly aware of what goes on in his body and responds strongly to visceral stimuli.

CONCLUSIONS

After eliminating organic disease as a cause of the constipation or distress by careful history, physical examination, laboratory and x-ray studies, the treatment is largely through education, diet, and the regulation of the habits of the individual. It is surprising how large a number of patients who believe themselves to be constipated and who resort to daily laxatives or enemas, will be found to have normal bowel movements or even diarrhea when the laxatives and enemas are discontinued and a normal diet resumed. This usually necessitates waiting for two or three days for the normal accumulation of feces in the colon. This period of waiting is the trying one for the individual who fears the effects of constipation. However, having conquered this fear through confident assurance and encouragement, the results are often surprisingly satisfactory.

In overcoming the distress which so frequently accompanies disturbances of function of the intestinal tract, the removal of irritants is of first importance. The use of cathartics, mineral oil, large enemas, bran, and yeast should be discontinued. Among the chief bowel irritants in the diet are the raw fruits and fruit juices, salads composed of raw vegetables, and the coarser cooked vegetables such as corn, cabbage, and Brussels sprouts.

If, after removal of these irritants, distress symptoms such as fullness, bloating, and pain immediately after eating persist, mild sedatives such as bromids or luminal are indicated. These drugs lower the threshhold of reflex irritability. Also the administration of hot packs to the abdomen for a short time after meals is often beneficial in relieving distress.

It is our practice to advise the taking of three ounces of olive oil as a retention enema every second night or one-half to one pint of warm water every second morning if the bowels have failed to move in the interim. It is not advisable to allow the bowels to go longer than two days unless the patient is controlled by daily rectal examinations to see that there is no accumulation of hard fecal masses. Should fecal impaction be allowed to occur, the confidence of the patient may be lost.

The establishment of a normal habit time of going to stool is important. As we have said before, probably the best time is in the morning after breakfast. Regular daily exercise should be advised, as it is not only good for the bowels but is excellent for the patient's general health.

In conclusion let me say that this type of patient is a frequent caller on the physician. By the application of time and patience, together with the physiologic principles outlined, results can be obtained. There is no more grateful patient than that chronic sufferer who has been relieved of his distress and has been taught how to regulate his bowels without resort to abnormal means. To him the day of miracles is not past.

9 Exchange Place.

DISCUSSION

F. A. Speik, M. D. (800 Auditorium Building, Los Angeles).—The disproved theory of autointoxication needs to be made known to the public. Many persons do not know that the diagnosis of autointoxication is evidence of lack of knowledge on the part of the physician.

The outstanding causes of intestinal disturbance are probably the cathartic, the enema, and the roughage craze in diet. The cathartic, however, does not affect the stomach so much.

The caliber, as well as the consistency, is the criteria on which to judge the sufficiency of the stool. Mucus in the stool denotes either nature's attempt to protect the colon from a hard, dry stool, or its attempt to lubricate the colon walls, which are in apposition in event the colon is emptied sooner than normal. At times mucus is partly caused by irritant enemas given, which empty the tract before normal time. High colonic flushings and frequent enemas are harmful to the normal mucosa.

A patient is not constipated unless he has a hard, dry stool. As Doctor Bailey states, the amount or frequency of the stool are not criteria for such diagnosis.

The patient who judges his elimination by the amount or frequency of the stool is making business for the patent medicine venders. The doctor gets him after he has spent his money and gotten his intestine into such a state that it takes weeks and months to correct the pathologic function.

I can hardly imagine the forty-pound bowel movement after eight and one-half months of no evacuation.

The use of the Sippy bowel powders and of psylla seeds is not mentioned in the paper. Their use is an aid to this type of patient.

⁂

E. S. Kilgore, M. D. (490 Post Street, San Francisco).—That happy laborer with the regular, semiannual forty-pound evacuation should really be introduced to the great American pill-worshiping public. And the realization that our race existed long before the advent of diet reformers and nationally advertised cathartics would also be very salutary for most persons. Doctor Bailey's back to nature advice can be heartily endorsed in general principle; but I am sure he would agree that, like other good rules, it has its exceptions. For many city folks, life is necessarily far removed from nature, and for some of them it has seemed to me impracticable to insist on purely natural dietary and bowel habits. The diet of primitive man must have been very coarse in texture, and yet, as Doctor Bailey makes clear, we find very commonly that in the spastic type of constipation the highly artificial smooth diet is more conducive to bowel regularity and comfort. And while condemning the wholesale and indiscriminate use of cathartics, we must frankly admit that many an old habitué remains perfectly happy so long as he takes his mild laxative pill every night and is decidedly uncomfortable if he omits it, and that after many years thus lived he does not have to increase his dose, and shows no evidence of harm from the practice. To combat such an apparently benign addiction has always seemed to me quixotic. The patient with constipation, like all others, should be considered individually, and his treatment prescribed without subservience to any rule, however laudable the rule might be in most cases.

SIGNIFICANCE OF OCCULT BLOOD IN STOOLS BY THE BENZIDIN METHOD*

By John F. Quinlan, M. D.
San Francisco

When blood leaves the vascular system in quantity it is grossly obvious; when the quantity is minute and subvisible it is occult, requiring the microscope, spectroscope, or chemical test for its detection.

CHEMICAL TESTS FOR OCCULT BLOOD

Fundamentally, there are few chemical tests for the detection of occult blood, the many others being but modifications of them. The most frequently employed are the benzidin, guaiac, and the amidopyrin color reactions.[3,5,9] Of these tests, the benzidin is the most dependable.[1,2,3] It is extremely sensitive, and this sensitiveness is its only failing; it consistently detects blood in quantities clinically insignificant.[1,2] For this reason the cruder techniques may be preferred. Of these techniques the "dry," "glass slide" Wagner modification is one of the most serviceable because of its ease, rapidity, cleanliness, and reliability:[2] to a match-head quantity of benzidin crystals are added, in order, two cubic centimeters of glacial acetic acid and twenty drops of hydrogen peroxid. A few drops of this solution are poured over a fecal smear on a slide. A further simplification is effected in the following procedure:[10] to a few benzidin crystals on a slide are added three drops of glacial acetic acid and two drops of hydrogen peroxid. These are stirred together, and then a match-head quantity of feces is stirred into the fluid. The color reaction may be green, bluish-green, or blue, depending upon the concentration of the hemoglobin. The quality, quantity, and order of addition of the reagents are factors in the dependability of the test, and so is the cleanliness of the glassware.[4]

REACTIONS OF FOODS AND MEDICAMENTS

It is important to know the reaction of various foods and medicaments to this test. The benzidin test reacts positively to raw vegetables, raw wheat flour, corn, oatmeal, potatoes, carrots, parsnips, and squash.[5,7] After cooking they react negatively. All meats, whether cooked or raw, react positively. Fish, including shellfish, raw, fresh, or pickeled, reacts positively: the reaction is weakened by cooking; and, after ingestion, the stools are usually negative. Eggs react negatively. Blaud's pills are positive: but two grams daily, after ingestion, give negative results in the stools.[5,6,7] Using the Wagner modification, the reaction is positive with cooked meat and negative with Blaud's, C. C., and A. B. & S. pills, bismuth subnitrate, tincture of ferric chlorid, potassium iodid, and extract of cascara sagrada.[1] We have found the test to be negative to ferrous sulphate and aqueous ferric chlorid, as well as cupric and cuprous sulphate, liver extract (Lilly and Wilson) and thyroid extract (Parke, Davis); and positive to ventriculin

---

* From the Medical Service of Mary's Help Hospital.

(Parke, Davis) and thyroid extract (Lilly) on repeated examinations with a benzidin solution positive to blood as a control.

Of the above list, meat is the only item of clinical importance. What is its fate after ingestion? Does it modify or nullify the test in the stools? Some investigators report that an ordinary meat diet rarely gives a positive benzidin test.[1,5,6,7] Yet, after the ingestion of ten grams of scraped raw meat, but not less (using a guaiac procedure), a positive reaction is obtained.[6] The guaiac test is less sensitive than the benzidin; and the ordinary diet contains much more than ten grams of meat. Again, after a two-day raw meat diet, the stools are positive to the benzidin and guaiac test, but they remain positive to benzidin seventy-two hours longer than to guaiac.[5]

SCOPE OF THIS STUDY

To determine the frequency of its appearance and its relation to the presence of meat as "muscle fibers," the stools of forty patients on general diets were examined for occult blood by the benzidin method, using the Wagner modification.

With occult blood	34		85%	
and muscle fibers,		15		50%
or blood cells		2		
Without occult blood	6		15%	
with muscle fibers		1		17%

Of the total number, the stools of thirty-four, or 85 per cent, reacted positively; and of these, seventeen, or 50 per cent, contained muscle fibers or blood cells as a possible modifying factor, whereas it appeared in only one of six cases, or 17 per cent, of stools reacting negatively.

The frequency with which muscle fibers appeared in conjunction with a positive benzidin test led us to carry the experiment further. Repeated stools of forty-three additional patients on a diet excluding meat, fish, and soups for a variable number of days were examined. The results, as outlined in the tables submitted, fell into three groups: (1) muscle fibers appearing neither before nor after the diet period; (2) muscle fibers appearing before, but not afterward; (3) muscle fibers appearing before and after.

TABLE 1.—*Muscle Fibers Appearing Neither Before Nor After the Diet Period*

Reaction Intensity		Diet Period	Diagnosis
Before	After	Days	
4°	3°	5	Epistaxis
3°	1°	5	Hemorrhoids
3°	1°	1	Rheumatic syndrome with splenomegaly
3°	0°	4	Cholecystitis
3°	2°	5	Duodenal ulcer
2°	0°	4	Cholecystitis: hypertension
4°	4°	4	Carcinoma stomach
3°	0°	10	Cholecystitis
3°	0°	6	Retroverted uterus: hypothyroidism
3°	0°	7	Nephritis with anemia
4°	1°	7	Nephritis
1°	0°	5	Cholecystitis
2°	0°	3	Constipation

TABLE 2.—*Muscle Fibers Appearing Before, but Not After Diet Period*

Reaction Intensity		Diet Period	Diagnosis
Before	After	Days	
0°	0°	5	Cardiovascular disease
4°	1°	4	Cholecystitis
4°	0°	3	Postinfluenzal asthenia
4°	1°	3	Arteriosclerosis: hypertension
1°	0°	5	Cholecystitis
4°	4°	6	Pyloric ulcer
3°	0°	6	Hemorrhoids: hypothyroidism
4°	0°	24	Chronic malaria with hepatosplenomegaly
4°	1°	7	Menopause
3°	4°	6	Mucous hypertrophy stomach
3°	0°	7	Cholecystitis
4°	1°	12	Hypothyroidism
3°	1°	3	Arteriosclerosis
1°	0°	9	Cholecystitis

Except in the few cases where the pathology was considered accountable, epistaxis, hemorrhoids, duodenal ulcer, gastric carcinoma, pyloric ulcer, or mucous hypertrophy of stomach, the benzidin test was invariably altered by the diet, being rendered negative in eighteen cases and practically so (one plus reaction) in eight others.

TABLE 2b.—*Muscle Fibers and Blood Cells Appearing Before but Not After Diet Period*

Reaction Intensity		Diet Period	Diagnosis
Before	After	Days	
4°	0°	15	Menopause
4°	0°	7	Syphilis stomach?
3°	0°	6	Cholecystitis
4°	0°	7	Menses
3°	0°	6	Arteriosclerosis

In this group, though the occult blood reaction was invariably modified by the diet, the stools were not freed of muscle fibers. Neither was the reaction so decidedly altered, nor as frequently, as

TABLE 3.—*Muscle Fibers Appearing Both Before and After Diet Period*

Reaction Intensity				Diet Period	Diagnosis
Before	M.F.	After	M.F.	Days	
4°	none	2°	few	14	Epistaxis
4°	rare	2°	few	?	Cardiorenal
2°	few	1°	few	4	Cholecystitis
3°	few	2°	few	5	?
4°	few	1°	rare	6	Hypertension
3°	few	1°	rare	10	Hemorrhoids
3°	none	2°	few	7	Cholecystitis
4°	few	0°	rare	4	Depressive psychosis; Mesenteric tumor?
4°	few	3°	few	3	?
4°	few	1°	few	4	Arteriosclerosis
4°	none	2°	few	3	Hepatomegaly

Stools (after diet)	No.	Reaction Changes			
		Neg.	%	2°	%
With muscle fibers	11	1	9	6	55
Without muscle fibers	32	18	56	23	72

it was in the groups preceding wherein muscle fibers were either not present or had disappeared.

In these stools wherein the reaction was changed from positive to negative, the mean period required was between 5 to 7 days, and the average time was 7.3 days.

Days	3	4	5	6	7	9	15	24
Stools	2	2	3	4	4	1	1	1

If the group is shifted to include reactions showing a change of two degrees or more, the mean period lies between 3 to 7 days, and the average time is 6.7 days.

Days	1	3	4	5	6	7	12	15	24
Stools	1	4	3	2	4	6	1	1	1

OTHER FACTORS AFFECTING THE TEST

Other conditions besides the presence of muscle fibers in the stools affect the dependability of the test. It is invalidated by affections of the nasopharynx, mouth, and anus, in which bleeding may play a part; as in epistaxis, tonsillitis, pyorrhea, hemorrhoids, ulcers, and fissures. Though many other diseases in our group are accompanied by a positive reaction, it may be reasonably concluded, from the changes noted under the conditions followed, that the reaction would be negative if the diet was adhered to for a sufficiently long period.

CLINICAL APPLICATION OF THE TEST

In its clinical application Gregerson has found the test, by the Wagner modification, to be constantly positive in carcinoma of the stomach, intermittently positive in ulcer, and negative in uncomplicated chronic gastritis, achylia, colitis, simple dyspepsia and constipation, nephritis, and cirrhosis of the liver. In carcinoma, however, the test was positive only in about 85 per cent of the cases. With this statement of Gregerson our findings tend to agree: of four cases, one proved negative—and without dieting.

COMMENT

The conditions under which the study was conducted were ideal from a clinical standpoint. Clinic patients afford a fair comparison of what may be expected of patients in private practice in regard to coöperation: we may have their word for it, but actually it is too frequently absent. Many conflicting results, though given some weight, must be discounted on this score—meat persisting in the stools while patients are on a meat-free diet. The "fishing" by which the specimens are obtained is revolting to too many temperaments to expect coöperation from all of them.

CONCLUSIONS

A meat diet very definitely affects the presence of occult blood in the stools by the benzidin method. To eliminate diet as a factor affecting the presence of occult blood by the benzidin method, meat, meat-soups, and fish must be excluded therefrom.

The dependability of the benzidin test is appreciably affected when meat fibers are present in stools.

The time required to render the stools negative for occult blood by the benzidin method, in the absence of accountable pathology, varies between five to seven days on a meat-free diet.

The benzidin test has a negative value generally, and a positive value only in cases of gastrointestinal carcinoma and peptic ulcer.

When the natural antipathy of many patients is considered, as well as the factors that must be eliminated to render the benzidin test valid, and the time required to effect it, its use becomes very restricted. The factors are not readily controlled outside of hospital practice. The test is too often alternately positive and negative in cases other than carcinoma or ulcer. With these two exceptions, and only under the conditions above described, it becomes a mere diagnostic frill, and is not justified as a routine procedure.

Mary's Help Hospital.

REFERENCES

1. Vaughn, W. T.: J. Lab. and Clinical Med., 2:437-442, 1917.
2. Gregerson, J. P.: Abstract, J. A. M. A., 67:84, 844, 914, 1916.
3. Hawk, P. B.: Practical Physiological Chemistry, seventh edition, 1921; 236.
4. Lyle, W. G., Curtman, L. J., Marshall, J. T. W.: J. Biol. Chem., 19:445-457, 1914.
5. Dewis, J. W.: Boston M. and S. J., 157:169-178, 1907.
6. Cowie, D. M.: Amer. J. Med. Sc., 133:408-423, 1907.
7. Ogilvie, A. G.: Brit. M. J., 1:755-756, 1927.
8. Aaron, C. D.: J. A. M. A., 83:741-743, 1924.
9. Goodman, E. H.: Amer J. Med. Soc., 134:506-517, 1907.
10. Reed, A. C.: Personal communication.

THE LURE OF MEDICAL HISTORY[*]

THOMAS AQUINAS

(1225 or 1227-1274 A. D.)

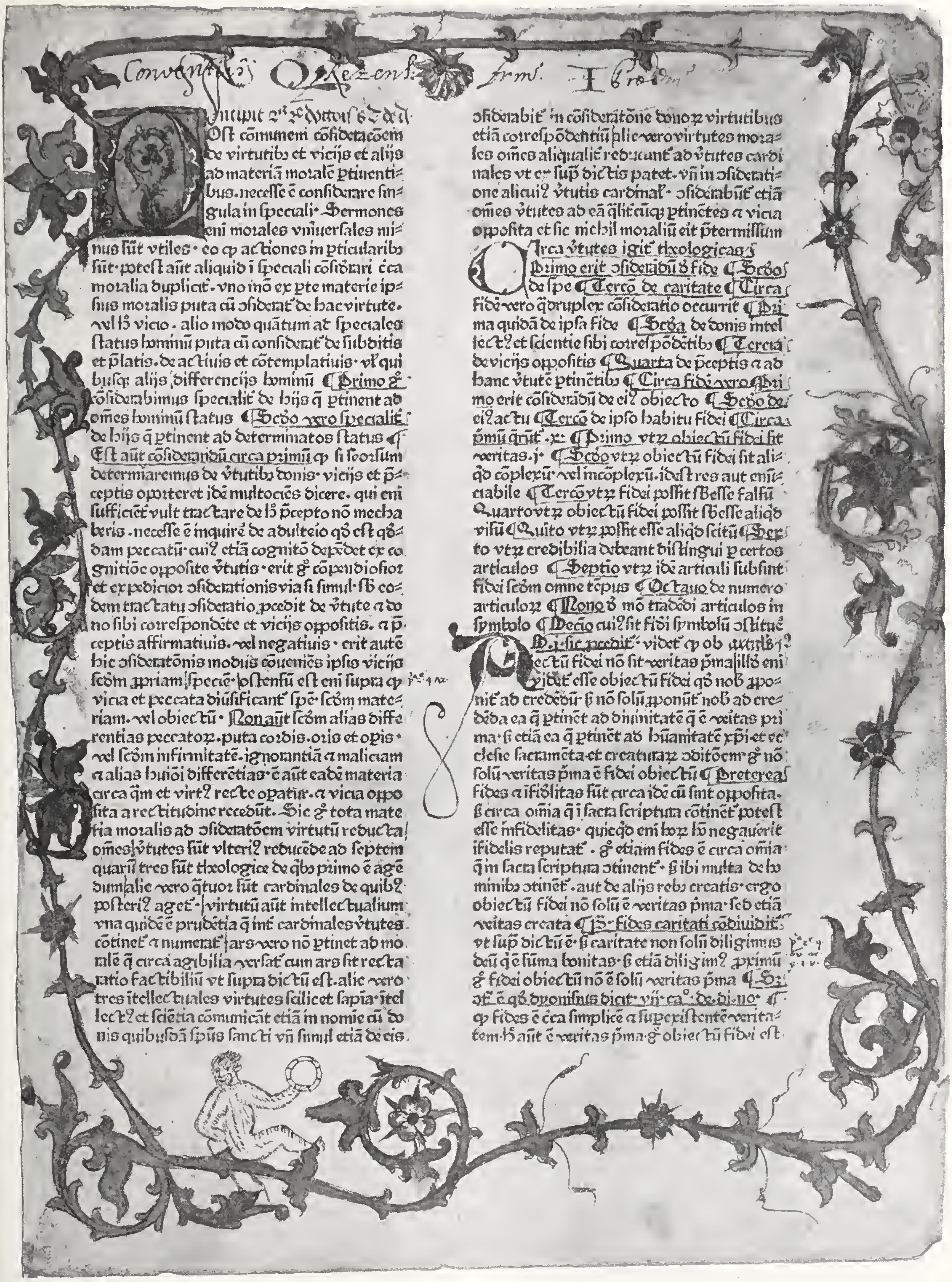
By Felix Cunha, M. D.
San Francisco

THE accompanying illustration represents a facsimile of the first page of the collected works of Thomas Aquinas, priest, philosopher, physician, of the thirteenth century, undoubtedly the most famous of his time.

The book itself is one of the very earliest of the Swiss printings by Berthold Ruppel of Basel, a famed typographer of the time. It is a reprint of manuscripts, two of which bear the date 1468; but it is uncertain whether the book appeared before or after this date. Ruppel was a contempo-

---

[*] A Twenty-five Years Ago column, made up of excerpts from the official journal of the California Medical Association of twenty-five years ago, is printed in each issue of California and Western Medicine. The column is one of the regular features of the Miscellany Department of California and Western Medicine, and its page number will be found on the front cover index.



First page from Thomas Aquinas—Summa Theologica. Basle—Ruppel ca. 1468.

rary of Gutenberg, and this particular volume is one of the existing examples of the type of work done by the German typographer and his fellow craftsmen.

The first page, as illustrated here, shows a flowered border done in a pen drawing, and in the lower part of the sketch a monkey. The significance of this is not understood. The entire drawing is the work of some cloistered monk. The illumination is particularly interesting, as the elaborate details in the letter "A" beginning each paragraph show. The printing is done on vellum.

The binding of the book is odd in that it is not of leather or skin, but is constructed of pages of incunabula of the time, pasted together to form thick boards. The back is of brown leather, with curious markings.

Another edition of the same work is described as having been printed by Peter Schoffer in Mainz in 1467. It is the first authentically dated edition, and represents the first book printed by Schoffer, another master typographer, contemporary of Gutenberg. This edition and that of Ruppel's, described above, are exceedingly rare, and so far as known, only two copies are in the United States.

As to Thomas Aquinas himself, there is little in the literature describing him, except from a purely ecclesiastical point of view. He was born near Aquino about 1227, and came from one of the most noble and eminent families of Europe. On his father's side he was related to the Emperor of Germany, Frederick I, and on his mother's side to Tancred, who had conquered that part of Italy known as the Two Sicilies and ruled over this region. He had, therefore, a legitimate claim to the title of prince.

Very early in life he was sent to a famous monastery, Monte Cassino, to begin his studies. This monastery possessed a great collection of scientific manuscripts, and unabated work was carried on to extend the knowledge already gathered and to add to this knowledge by laborious and tedious study and interpretation of the classics. Constant additions and gifts had made this collection, in its time, the most precious in all Europe. After spending five years in this monastery he was sent to the University of Naples, where he remained for two years, and then entered a Dominican cloister.

The science and medicine of the Middle Ages rested in the hands of the Dominicans, because it was through their laborious work in the preparation of manuscripts and the translating and interpreting of existing knowledge, as well as the careful guarding and transmission of these manuscripts in the Order, that finally they were made available for print as soon as the press was invented. This was the link between the medicine which had gone before and that which came after. The second link was to come later, and consisted of the translation from the "dead languages" into the modern.

Essentially, Thomas Aquinas contributed nothing new to the ideas of the day as to medicine, nor did he cause any upheaval in the medical thought then prevalent. Philosophy and medicine were considered inseparable, and the speculations of these monks in the realm of philosophy were closely tied to the field of medicine.

Two medical "dicta" were announced by Thomas Aquinas, and to these he adhered. They were not new—merely a repetition of what had been announced by others. One was that the body was formed by the junction of material and spiritual principles, that man consisted essentially of a spiritual mind united to a material body. The other was in his belief in the "philosopher's stone," or "great elixir," for which all scientists and philosophers then searched. He described it as "that medicine which taketh away all impurities and corruption of a baser metal, so as to make it into purest silver and gold, and is thought by wise men to be able to wholly remove the corruption of the human body and prolong life for years."

He is mentioned by Dante in his "Divine Comedy" as the greatest philosopher of his time, possibly because in 1252 he lectured publicly in Paris and made a widely favorable impression, returning there in 1269 to lecture on theology. His complete works consisted of seventeen volumes. Two were entirely scientific speculations in the realm of physics and chemistry; and twelve were on philosophy, intermingled with medicine. The remaining three were on theology. In addition to these there were innumerable translations with his comments, including a "Commentary on Aristotle," several short treatises on "Heaven and Earth," "A Method for Uplifting the Soul" (perhaps one of the first self-helps), with suggestions for self-hypnotism, or psychotherapeusis.

He died in 1274 at the age of 47 or 49. (The records are not exact as to the date of his birth.) There is a Dominican cloister in Naples used as a municipal school by the city authorities, adjoining which is a chapel containing a tomb and a crypt dedicated to him. According to legend, Christ appeared to him and thanked him when he wrote his "Summa Theologiae" (Summary of Theology) in the words *Bene scripsisti de Me, Tomasso,*" "You wrote well of me, Thomas."

The interest of Thomas Aquinas to medicine centers in his laborious translation and preparation in manuscript form of the old medical masters, thereby forming the first link in their transmission afterward, on the invention of the printing press, into works which still later were to be passed on into foreign and modern tongues.

450 Sutter Street.

CLINICAL NOTES AND CASE REPORTS

FACTITIAL PROCTITIS

WITH ULCERATION WRONGLY DIAGNOSED AND TREATED AS A PRIMARY RECTAL CARCINOMA

By George E. Malmgren, M. D.
Los Angeles

In 1929 sixty-five cases of factitial proctitis, observed at The Mayo Clinic between 1921 and 1929, were described by Dr. L. A. Buie and myself.[1] We defined the term as "used to designate pathological phenomena, sometimes found in the walls of the rectum following the extrarectal application of radium or a combination of radium and x-ray in the treatment of lesions involving pelvic structures other than the rectum."

SIGNS AND SYMPTOMS

Factitial proctitis is characterized by the same type of changes which may be found on any mucosal or skin surface following irradiation therapy. Proctoscopic examination reveals typical appearances in all of its various stages. In its earliest and mildest form, telangiectasia only is seen, and newly formed blood vessels with resultant hyperemia and bleeding appear. This may go on to actual ulcer formation. These ulcers vary in size from one to four centimeters in diameter, and may be deep and crater-like. They are usually covered with considerable necrotic material. If this is wiped off, a tenacious, tough, yellow or silver-gray membrane is found to cover the base. Areas of telangiectasis usually surround the ulcer. A rectovaginal fistula occasionally develops from complete destruction of the wall between the rectum and the vagina.

The onset of these changes varies from a period of two or three weeks to several years following the last application of radium and x-ray. Subjectively these patients complain of atypical sharp, dull or bearing-down rectal pain, hemorrhages of bright red or clotted blood from the rectum, and tenesmus, with increasing desire to go to the toilet.

We feel that these phenomena are not common, are usually mild, and certainly cannot be regarded as an objection to the treatment of carcinoma of the uterus or ovary, or uterine fibroids with radium.

The prognosis of these rectal lesions depends entirely upon the fate of the original extrarectal lesion for which the radium treatment was given. In the great majority of cases (73.8 per cent) this has proved to be carcinoma of the uterine cervix.[1] We have found that if the carcinoma is controlled and proper palliative treatment instituted, the factitial changes and ulcers will usually heal and disappear. This treatment must occasionally be continued over a long period, and sometimes even years elapse before the bleeding disappears.

I wish to report the following case as an example of one of the severest forms of the disorder, where a diagnosis was not made and where this benign entity was treated as a primary rectal malignancy.

REPORT OF CASE

Mrs. C. A. in 1930 complained of bloody vaginal discharges and weight loss of one and one-half years' duration. A diagnosis of carcinoma of the cervix of the uterus was made. Two courses of vaginal radium applications were given along with a series of x-ray treatments. Mild symptoms of rectal irritation followed this treatment but disappeared after a few weeks. She has had no uterine symptoms since the last radium application (July, 1930). Repeated pelvic examinations have failed to disclose any evidence of recurrence. In May of 1931 the patient began to pass small amounts of bright red blood with her stools. She went to a physician who told her that she had "piles," and prescribed a box of suppositories. The bleeding continued and increased in severity. She then was given a course of injection treatments for hemorrhoids, without benefit. In August of 1931 she began to complain of a constant dull pain located about six inches above the anal orifice. At the time of bowel movements this became aggravated and changed into a sharp, colicky, knife-like pain. She began to have constant bearing-down sensations and went to the toilet six to eight times a day. She seemed unable to empty her rectum and usually passed only small quantities of bloody mucus. A proctoscopic examination was done in September, 1931, and a diagnosis of primary carcinoma of the rectum was made. Immediate surgery was deemed necessary because of the extreme amount of discomfort. On September 15, 1931, a colostomy was made. She immediately improved and was sent home to gain strength for a posterior resection of the growth.

The patient was examined by me on November 10, 1931, for the purpose of determining whether the growth was primary in the rectum or an extension from the uterus. A number of indurated ridges around the anal canal were present from the recent injection treatment. A large, indurated, fixed, infiltrating, ulcerated mass was felt on the anterior wall of the rectum, about eight centimeters above the anus. The proctoscope revealed the ulcer to be about four centimeters in diameter. The edges were piled up and it was covered with slimy necrotic material. When the base was swabbed, the characteristic silver gray, tenacious membrane was found to cover the ulcer. Numerous telangiectatic areas, which bled on the slightest trauma, surrounded the ulcer. A diagnosis of factitial proctitis with ulceration was made and palliative treatment instituted. She continued to improve and the colostomy was closed January 15, 1932. A proctoscopic examination on October 3, 1932, revealed the ulcer completely healed. Telangiectasis, however, was still present, and the patient passes a small amount of blood with most of her bowel movements.

COMMENT

This case is an example of the extreme untoward effects of improper diagnosis. Suppositories and injection treatments were used, and served only to cloak the real nature of the disorder. A false diagnosis of rectal carcinoma led to an unnecessary colostomy which had to be closed at a later date.

1930 Wilshire Boulevard.

REFERENCE

1. Buie, Louis A., and Malmgren, George E.: Factitial Proctitis: A Justifiable Lesion Observed in Patients Following Irradiation, International Clinics, Vol. 3, Series 40. J. B. Lippincott Company, Philadelphia.

PURULENT MENINGITIS

By Elmer M. Bingham, M. D.
Riverside

As an introduction to a review of recent advances in the therapy of purulent meningitis, we wish to present three uncommon cases of meningitis. These patients were admitted to the Riverside County Hospital during the past five months.

REPORT OF CASES

Case 1.—E. H., a Mexican girl of four years, was admitted on July 16, 1932, and a diagnosis of tubercular meningitis made. Lumbar puncture on admission revealed a normal pressure and cell count. The following day, spinal fluid pressure was 30 millimeters of mercury without increase in cells. Chest x-ray was diagnosed as bronchopneumonia, and lumbar punctures were discontinued until July 20, when convulsions again occurred. Spinal fluid was then turbid and antimeningococcic serum was given before the laboratory reported both Gram-negative and Gram-positive diplococci. Lumbar taps were continued, but bacteria became more numerous and cells increased to 5,500. The tryptophan test was positive. No tubercle bacilli were found in direct smears. The organisms were identified as *Meningococcus crassus.* The patient died July 24, and permission for autopsy was not obtained. Guinea-pig inoculated with fluid showed tubercles in the liver, spleen, and one kidney.

TABLE 1.—*Case No. 3. Summary.*

Day	Hour	Pressure	Cells	Bact.	Amt. Rem.	Surgery
1	10 p. m.	32 mm.	1200	0 (?)*	10 c.c.	
2	8 a. m.	16	760	Rare	20 c.c.	Mastoidectomy
	1 p. m.	14	1282	Few	30 c.c.	Carotid exposed; 10 c.c. acriflavine
	10 p. m.	32	....	....	30 c.c.	
3	8 a. m.	14	345	Num.	21 c.c.	10 c.c. acriflavine, left carotid
	3 p. m.	26	417	....	5 c.c.	(Block ?)—Cisternal—bloody
	11 p. m.	14	....	....	10 c.c.	
4	8 a. m.	22	170	Many	23 c.c.	10 c.c. acriflavine
	3 p. m.	13	550	....	25 c.c.	
	10 p. m.	48	1575	....	50 c.c.	

* Technician not available.

Meningococcus crassus is reported[1] as nonpathogenic, a secondary invader in meningitis caused by other organisms. It is readily identified by cultural methods.

* * *

CASE 2.—G. M., a white man of forty-seven years, was admitted on November 6 with a history of headaches, dizziness, delirium, and coma, which developed during the two days previous to admission. When I first saw him the following day, the patient was in deep coma. Lumbar puncture was done and fluid was found under increased pressure and turbid. Pneumococci were present in enormous numbers. Blood count showed only 5,700 leukocytes with a temperature ranging to 105 degrees. Six hours later 37 cubic centimeters of spinal fluid were removed showing a 50 per cent reduction in cells. At 8 p. m. cisternal and lumbar taps were done simultaneously and normal saline introduced by gravity pressure through the cisternal needle until clear flow was established from the lumbar needle. Condition failed to improve and the patient expired the following morning. At autopsy the entire brain surface was found covered by a thick, greenish exudate.

Obviously, subarachnoid drainage or instillations will have little effect upon such extensive infections which are seen late. While irrigations of the spinal canal will sometimes prevent a low spinal block in stages where the fluid is too thick to flow, it was employed in this case to reduce the number of bacteria present. Kolmer[2] advises against the injection of chemical antiseptics into the subarachnoid space.

* * *

CASE 3.—H. H., a white boy of eight years, was admitted on the night of November 12, 1932, with evidence of a left otitis media and meningitis. Meningeal symptoms apparently developed on November 7. On admission, temperature was 104.4 degrees, with white blood cells 31,600. Lumbar puncture revealed a turbid fluid with a pressure of 32 millimeters of mercury. Because of the history suggestive of otitic origin, no antimeningococcic serum was given. The following morning, left mastoidectomy* was done under ether anesthesia. Lumbar puncture at noon revealed further increase in cells and bacteria. Direct smears from the mastoid cells were negative for bacteria and subsequent cultures were sterile. In view of the sterile mastoid and the positive identification of streptococci in the spinal fluid, the patient was again anesthetized and the left common carotid exposed* by an incision

---

* Operations by Drs. E. P. Miller and W. K. Templeton.

TABLE 2.—*Summary from Literature, Showing Results of Intracarotid Therapy.*

Series	Staph.	Strept.	Pneumo.	Mening.	Preg'l Iodin	Acriflavine	Serum	Right Carotid	Both Carotids	Recovery	Death
Crawford (10)	3	..	..	..	3	..	..	1	2	2	1
	..	3	..	..	3	..	..	1	2	1	2
	..	..	..	3	3	..	3	..	3	2	1
Dowman	1	..	..	..	1	..	..	1	..	1	..
	..	3	..	..	3	..	..	3	..	1	2
Davis	1*	1*	..	..	1	..	..	..	1	..	1
	..	1	..	..	1	..	..	..	1	..	1
Spurling	1	..	..	..	1	..	..	..	1	..	1
	..	1	..	..	1	..	..	..	1	..	1
Lindemuller	..	1	..	..	1	..	..	1	..	..	1
	..	..	..	1	1	..	..	1	..	..	1
Ersner and Mendell (6)	..	2	..	..	2	2	..	..	2	2	..
Kolmer (2)	..	7	..	..	(5)	(5)	2	..	7	..	7
	..	..	3	..	..	..	(3)	..	(3)	..	3
	..	..	..	1	..	..	1	..	1	1	..
McMahon	..	..	1	..	..	..	1	..	1	1	..
Kauffman	..	1	..	..	1	1	..	..	1	..	1
Total	6	20	4	5	27	8	10	8	26	11	23
Recovery	3	4	1	3	9	2	4	3	8	..	..
Death	3	16	3	2	18	6	6	5	18	..	..

* Mixed infection.

parallel to the anterior border of the left sternomastoid muscle. The wound was left open and a guide ligature placed around the carotid. Ten cubic centimeters of 0.5 per cent neutral acriflavine were injected. This was repeated on November 14 and 15, with spinal fluid findings as shown in the chart. Culture of the fluid showed hemolytic streptococci. Blood culture taken on November 15 remained sterile. At no time was there evidence of acriflavine in the spinal fluid, although a distinct coloration could be seen on the left side of the face. At the end of the third hospital day the child showed a marked change, spinal fluid pressure rising, coma deepening, and breathing irregular. Patient expired the following morning. At autopsy the coloration of the left side of the face was marked, but there was no tinge to the brain or meninges. The brain was wet and edematous, with no organized fibrin or exudate. Summary of condition at different hours is given in Table 1.

This was our first attempt at intracarotid therapy, and we feel justified in interpreting the results as encouraging although the outcome was a fatal termination. We are unable to explain the absence of the dye in the spinal fluid; the urine remained heavily colored. We were unable to obtain Pregl's solution of iodin at this time and resorted to acriflavine. In the absence of continuous spinal drainage, as advocated by Retan,[3] or by surgical means, we believe this case demonstrates the necessity of dehydration by limiting fluids and hypertonic solutions intravenously to accomplish two purposes: (*a*) concentration of serum or antiseptics in the spinal fluid; (*b*) control of cerebral edema and intracranial pressure.

INTRACAROTID THERAPY

The intracarotid treatment of purulent meningitis was first advocated by Kolmer [4] after considerable experimental work on artificially produced pneumococcic meningitis in dogs. By exposing the carotids and injecting anti-pneumococcic serum into both arteries daily for at least three days, he was able to show recoveries in 60 per cent of the animals. Intravenous chemotherapy produced no results in his work. He recommended the procedure for a clinical trial in human cases, admitting it to be a major procedure, theoretically sound and experimentally successful, justifiable in a condition where the mortality approaches 100 per cent.

The technique was first applied, to our knowledge, for the introduction of arsenical preparations in cases of paresis.[5] Since Kolmer's original work, thirty-four cases of purulent meningitis have been reported as treated by this method, with a recovery of 32.3 per cent. It is advisable to use a small tuberculin needle to avoid bleeding from the carotids. Drainage by the lumbar or cisternal route should follow the injection shortly. We do not agree with Ersner and Mendell [6] that partial thrombosis which occurred in one of their patients favored the course of the disease by putting the part at rest. Unimpaired circulation is paramount in an infected field.

The literature on other types of therapy which have effected cures is amply covered by Rosenberg and Nottley [7] and Applebaum.[8] The results indicate that intracarotid therapy offers another tenable method, especially if we accept former statistics by Yerger [9] where the mortality was 97 per cent. Most of the favorable results have been obtained by the use of Pregl's iodin. Kolmer [4] recommends the use of serum or acriflavine and the exposure of both carotids, regardless of the location of the focus of infection.

Riverside County Hospital.

REFERENCES

1. Hiss-Zinsser: Textbook of Bacteriology, fifth edition, p. 535.
2. Kolmer, J. A.: The Intracarotid Method of Treatment for Meningitis with Recoveries, J. A. M. A., 96:1358 (April 25), 1931.
3. Retan, G. M.: Forced Spinal Drainage in Its Relation to Infections of the Central Nervous System, J. A. M. A., 99:826 (Sept. 3), 1932.
4. Kolmer, J. A.: Pneumococcic and Streptococcic Meningitis, J. A. M. A., 92:874 (March 16), 1929.
5. Hirsch, H. L.; Myerson, Abraham; and Halloran, R. D.: The Intracarotid Route in the Treatment of Paresis, Boston M. and S. J., 192:713 (April 9), 1925.
6. Ersner, M. S., and Mendell, T. H.: Streptococcic Meningitis with Intracarotid Treatment and Recoveries, J. A. M. A., 99:1596 (Nov. 5), 1932.
7. Rosenberg, Lester, and Nottley, H. W.: Recovery from Streptococcic Meningitis, Ann. Int. Med., 4:1154 (March), 1931.
8. Applebaum, Emanuel: Streptococcus Meningitis—Recovery of Three Cases, J. A. M. A., 98:1253 (April 9), 1932.
9. Yerger, C. F.: Meningitis of Otitic Origin, J. A. M. A., 79:1924 (Dec. 2), 1922.
10. Crawford, A. S.: The Intracarotid Treatment of Meningitis, J. A. M. A., 98:1531 (April 30), 1932.

MERCURIAL DERMATITIS

FOLLOWING LOCAL APPLICATION OF CREAM FOR REMOVAL OF FRECKLES

By W. L. Marxer, M. D.
Los Angeles

The scarcity of literature relating to cases of mercurial poisoning, together with its rarity of occurrence in clinical practice in spite of the many thousands of instances in which topical mercury is used, gives us an idea as to its infrequent incidence. In a review of the literature of the past twenty years, I have found fewer than an equal number of cases. Each case, however, has been distinctly different, yet all tend to emphasize two features of hydrargyrism, namely, its varied skin manifestations, and the uncertainty of its degree of involvement and extension.

The most common skin lesion appearing is the papule in the vicinity of the hair follicle, spoken of as folliculitis; but more severe consequences may follow its use, as in the case in which gingivitis, with loss of a tooth permanently, from topical application of mercury for psoriasis, results.[1] There have been no cases reported, however, in which following topical mercury application, the patient suffered dangerous kidney complications. The skin manifestations and types of skin lesions are very numerous, and nearly every type of skin lesion has been described in which mercury has been the responsible aggressor.

REPORT OF CASE

The case to be reported is that of a young woman, age 26, weight 120 pounds, height 5 feet 5 inches, who

---

[1] Beckett, P. E., Dermat. and Syph., (June), 1925.

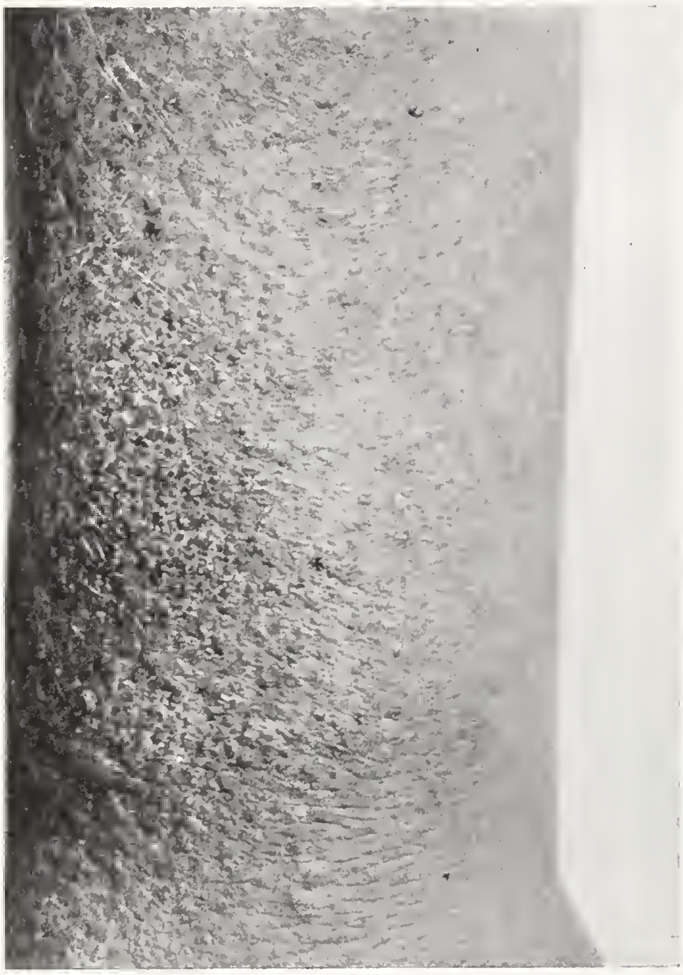


Fig. 1.—Showing eruption as it appeared on the dorsum of the forearm.

was so ill that she called the doctor to see her at her home because of great discomfort. She stated that on the preceding night she had applied to the dorsum of her arms and to her cheeks some freckle cream. The quantity used was not over one gram. Stated that she had a very uncomfortable and restless night, and that when she awakened in the morning she noted that her eyes, face, neck, and arms were swollen and itchy. She washed her skin carefully with soap and water, and applied zinc oxid ointment as per directions in literature accompanying the jar of cream, but enjoyed no relief; on the contrary she found that she was considerably less comfortable than she was before its application.

I saw the patient at about 10 a. m., at which time there was a papular eruption on the dorsum of both arms and on the face. There was also, but in a less marked degree, a similar eruption of the thorax, front and back, and the front of the abdomen. There were present also a few similar lesions on the medial sides of both thighs. The lesions occurred symmetrically, and wherever the lesions occurred there was pruritus and burning. There was a marked edema of the eyelids and face, as well as the neck; wherever the lesions were could also be found edema. Temperature 99.6 degrees and pulse 82. Temperature returned to normal in three days. Blood and urine examination revealed no pathology.

Calamin lotion with one per cent nupercain was used locally, and prescribed ephedrin sulphate, grain three-quarters, and sodium bromid, grains 3, were used in capsule form.

Patient's subjective symptoms began to disappear immediately, and within seven days left her without any annoying skin symptoms; but it was not until three weeks later that she was entirely free from symptoms, because each time she would perspire the sites of application of the ointment would cause her some discomfort with burning and itching. The chief type of lesions developed was that of a folliculitis, as is evident from the accompanying photograph.

On a previous occasion this patient had a similar experience from the use of 1-5000 bichlorid of mercury as a wash for an external otitis. Lesions similar to the ones described above developed on the skin wherever the wash came in contact with it, and the same set of subjective symptoms developed locally, as did with the present illness, but confined to the area of involvement.

508 West Santa Barbara Avenue.

ADDISON'S DISEASE

REPORT OF CASE TREATED BY ESCHATIN

By William Fitch Cheney, M. D.
San Francisco

In past years of practice only six patients can be recalled that were under personal observation and diagnosed as having Addison's disease. All of these patients died within a year, and some of them within a few weeks after the diagnosis was made, irrespective of the plan of treatment employed. Recently, however, another patient has been under observation who is not only alive nearly two years since first seen, but has been relieved of all the original manifestations. Such a deviation from previous experience seems to justify report and explanation.

REPORT OF CASE

Mrs. B., age twenty-seven, first came for advice on September 28, 1931. She had left her home in the interior of this state in January, 1931, for a trip abroad. She was well, apparently, until she reached Cairo, Egypt, the following May. Then she was taken ill with persistent nausea and vomiting, whether she ate or not, accompanied by prostration and weakness, lasting for ten days; but without pain in her abdomen or elsewhere. She noted at this time that her color seemed darker than before. There followed an interval of two or three weeks when she felt fairly well again, though her skin continued to be abnormally dark. Deciding to return home, she reached Jugo Slavia, when another attack occurred, again characterized by nausea, vomiting, and prostration; and this time several weeks passed before she felt well enough to proceed upon her journey. She managed finally to cross the ocean without any serious recurrence, and remained fairly well until she reached the United States. Then, in the latter part of August and during September, her attacks reappeared, for several days at a time. She had never felt perfectly well since the onset of her illness in May, but always was "terribly weak"; and though better and worse at intervals, her illness had never entirely disappeared. She complained that she constantly felt exhausted, and worn out by any exertion. She had no appetite, was always more or less nauseated, especially on rising in the morning, and had lost considerable weight. She observed also that her color had gradually grown much darker since leaving Egypt, the pigmentation increasing steadily, mostly on exposed surfaces of the body, but also in other parts. There had been no disturbance of her menstrual periods at any time, nor of her bowels.

On physical examination the patient was still fairly well nourished, weighing 138 pounds. The striking feature about her appearance was her color. This was due to a brownish-black pigmentation of face, neck, hands and forearms, so extreme that she resembled a negress. Her lips particularly were black, and the palms of her hands showed brown lines in every crease. There was similar brown-black pigmentation irregularly distributed on the dorsum of the tongue, the inner surface of the cheeks, the gums, the soft palate, and the pharynx. When the clothing was removed the pigmentation was seen to involve also the trunk, the limbs, and the external genitalia. Particularly dark were the mammary nipples and areola, the vaccination scars on arms, all spots where insect bites had been acquired in Europe, and the waistline where skirt-bands had pressed.

Next in significance to the color was the evidence of serious disturbances in the circulation. The heart rate was 92 at rest. Its rhythm was regular and its sounds were clear, but weak and lacking force. The blood pressure was so low that at times it was difficult to detect it; and the systolic reading was never above 70 to 80. No evidence of disease was found in the lungs. The liver and spleen were not enlarged. The abdominal and pelvic organs presented no abnormality. Blood examination showed only a slight secondary anemia and a negative Wassermann. The urine was normal in every respect.

COMMENT

It is not in order at this time to discuss the details of differential diagnosis; but the combination of violent gastric disturbances in recurring attacks, the extreme general pigmentation of the body and the circulatory asthenia shown by a weak, rapid heart and an excessively low blood pressure, made up a picture that could hardly be mistaken. Once the conclusion was reached that the case was one of Addison's disease, the first thought was of the Swingle-Pfiffner suprarenal cortex extract, from which such remarkable results had recently been reported at the Mayo Clinic. A telegram to Doctor Rowntree, offering to send the patient to him for treatment, brought the prompt response that a satisfactory product of the extract was not available at the time. Subsequent correspondence brought out the fact that further preparation of the Swingle-Pfiffner extract had been assumed by Parke, Davis & Company. This firm answered my inquiries, however, with the statement that none of this substance would be ready for use before the first week in November.

Thus there appeared to be no immediate prospect at the time of any plan of treatment different from that previously employed in such cases. The patient was placed in bed at Stanford Hospital. Powdered suprarenal cortex (Parke, Davis and Company) was ordered by mouth three times a day; one five-grain capsule, which soon had to be reduced in amount. Parke-Davis solution of adrenalin, 1 to 1000, was given twice a day hypodermatically, but not more than five minims at a dose could be tolerated. Twice a day, also, one ampoule of a solution of adrenocortin, made by a California firm, was given intragluteally, one cubic centimeter of which was said to represent five grams of adrenal cortex. But all these measures failed to relieve the weakness, prostration, anorexia, nausea and vomiting, or to raise the blood pressure. As described by Rowntree and Snell in their monograph on Addison's disease, doses of suprarenal cortex, given by mouth, were found to cause increased nausea unless they were kept small; and adrenalin injections likewise, except in inadequate dosage, caused the patient such pronounced tremor that she begged to have the remedy discontinued. As regards the ampoules of adrenocortin, their failure to benefit was undoubtedly due to the weakness of the preparation; for one cubic centimeter represented, at most, only five grams of adrenal cortex, while in the extract known as eschatin, ultimately put out by Parke, Davis & Company, one cubic centimeter represents 30 grams.

Thus, during the month of October, 1931, no improvement in the patient's condition could be noted. On the contrary, she grew weaker and weaker, unable to eat, unable to keep what little food she did eat, unable to get out of bed or even to sit up in bed without faintness. It seemed that there was little or no hope, and that the end was near. Finally, after repeated correspondence with Doctor Lescohier, of Parke, Davis & Company, which must have tried his patience, in despair a telegram was sent on November 7 advising that my patient was so low the new extract must be sent at once if any good was to be accomplished. That same afternoon their answer came by wire: "Two ten cubic centimeter vials eschatin air mail today"; and at midnight the next day the package was delivered here. Never in many years of practice has any experience given an equal sense of elation.

Next morning, the first dose of eschatin was administered. Parke, Davis & Company had warned that the supply was very limited, so that only one cubic centimeter was injected for this first dose. Each day subsequently this was repeated, while all other medication was discontinued. Within a week definite improvement was noted. Appetite returned and a feeling of well-being. Nausea and vomiting ceased. Strength returned gradually, so that in ten days the patient was able to be up and about her room. On December 12 she was well enough to be allowed to leave the hospital and return to her home. Never since then has her trouble recurred. On the contrary, she has not only remained free from any serious symptoms, but has been able to attend constantly to her household duties and to go about as she pleases, in her home or on the street, without any sense of fatigue greater than she ever experienced before her illness. The blood pressure little by little increased until now, for several months past, it has averaged 110 systolic. The pigmentation has gradually disappeared to such a degree that no one now would be attracted by any peculiarity in the patient's appearance; but the color has never become entirely normal, though it continues gradually to improve.

During the early part of 1932 the daily dose of eschatin was increased to 1.5 cubic centimeters, and during the latter half of the year to 2 cubic centimeters. This increase was not prompted by any serious relapse, but simply by the patient's complaint that she did not feel as energetic as before. The dose can be still further enlarged as desired, as time goes on, if developments require it. When last seen, on June 16, 1933, this patient apparently was in good health, with no complaint to make of any kind. She still takes 2 cubic centimeters of eschatin by injection every day, which she has learned to administer to herself as diabetic patients do with insulin.

* * *

My thanks are due to Doctor Rowntree for helpful advice at the outset; and to Parke, Davis & Company for allowing their extract to be used in this case, even before it was ready for general distribution. It will undoubtedly be a satisfaction to them to know that by this action they aided in saving a life.

210 Post Street.

Even in the populous districts, the practice of medicine is a lonely road which winds uphill all the way, and a man may easily go astray and never reach the delectable mountains unless he early finds those shepherd guides of whom Bunyan tells—Knowledge, Experience, Watchful, and Sincere (Osler).—*Weekly Bulletin, California Department of Public Health.*

BEDSIDE MEDICINE FOR BEDSIDE DOCTORS

An Open Forum for brief discussions of the workaday problems of the bedside doctor. Suggestions of subjects for discussions invited.

BURNS

W. C. Adams, M. D. (1904 Franklin Street, Oakland).—*Symptoms.* These vary, as a rule, in accordance with the severity of the burn and the nervous make-up of the injured individual. The symptoms are practically the same in all types of burns, whether they be chemical or thermal, moist or dry, x-ray or electrical, and for general purposes can be described as local and constitutional in their action on the human body. Again, they may be classified as objective and subjective. For simplicity's sake, these several classifications will be abandoned and the various symptoms described more or less together.

The most outstanding and common symptom is pain, and its severity depends upon the extent and depth of the burn. Pain, being subjective in nature, is naturally somewhat dependent upon the individual, some persons crying out and becoming hysterical over comparatively small and minor burns, while others, with much more extensive and deeper ones, make but little fuss. Nevertheless, pain is almost always present to a greater or less degree.

In burns of the first degree the skin or mucous membrane becomes reddened, varying from the slightest pink, disappearing quickly after removal of the cause, to an intense red which may remain for two or three days, and then gradually subsiding to a tan. This latter is most often seen in sunburn and overexposure to x-ray or other forms of electrotherapy. The pain in this type of burn is manifested by a sensation of warmth, in the milder cases, to very marked smarting and soreness in the more severe ones. When first degree burns are severe and extend over a large portion of the body, as in sunburn, quite excruciating pain and discomfort with shock may ensue. I have seen cases of this type so severe that hospital attention and opiates were necessary for several days. However, the pain and redness usually disappear in two or three days, with or without treatment. The temperature seldom rises above the normal in these cases.

Second degree burns present an entirely different picture. In this type we may have simple vesiculation, with moderate pain and little destruction of the superficial layers of the skin or mucous membranes; or again we may have all of the sad and serious sequelae of burns, such as death occurring in a few hours, a tremendous amount of suppuration, toxemia, emboli, excruciating pain and slow healing extending over a period of weeks. Even without destruction of the deepest layers of the skin, it is possible to have much damage done to the subcutaneous tissues and underlying structures which, delaying the healing process, quite often causes limitation of motion of the joints and other complications. This is frequently noted in burns of the hands, many weeks being required to regain the normal strength and function of the fingers. The vesicles often do not appear for one to two days after the exposure, and then may go on to extensive bullae with consequent rupturing, weeping large quantities of serous fluid and exposing a very reddened surface, over which is most often spread a fibrinogelatinous membrane. It is under this gelatinous coat that the healing process takes place. It is often the case in these large ruptured bullae that extensive suppuration develops with the resultant absorption and toxemia. Shock commonly occurs in second degree burns, especially where about one-fourth of the body surface is involved, and may appear immediately after the occurrence of the burn, resulting in death at once, or may last from a few hours to days; and then the patient becomes improved or passes into toxemia and dies, toxemia being the usual cause of death when it occurs several days after the accident.

In burns of the third degree we may have destruction of all the layers of the skin only, or this destruction may extend varyingly to the subcutaneous tissues, muscles, blood vessels, bones or the underlying organs. The overlying skin may remain intact but be charred or give a blanched, leathery appearance, followed later by sloughing and the appearance of granulation tissue. These types may be small or extend over large areas, and are most frequently the result of exposure to dry burns, such as direct electric current, jumping of current from x-ray machines and flames. Of course, scalding and exposure to chemicals will produce the same degree, but usually requires much longer exposure. It is from these third degree burns that immediate death from shock occurs most frequently. Again, very extensive burns of this type will produce surprisingly little shock. Large sloughs usually take place in about two weeks, but may be much longer in forming, depending upon the depth of the burn. After several weeks of treatment the patient appears to be improving satisfactorily, the granulations appear clean and healthy, when, as out of a clear sky, restlessness suddenly develops, the temperature rises, the pulse becomes rapid, and the patient goes into unconsciousness and rapidly dies. Such a death is usually due to a sudden toxemia. Death occurring suddenly after ten days, takes place more often in children, and in women more often than in men.

In extensive burns of second and third degree, there is most often asthenia, hypotension and subnormal temperature, which is almost always followed by a definite and often quite marked rise in temperature above the normal. When the sloughing has been completed and the fresh granulations begin to arise, the temperature usually drops and the patient shows marked general improvement.

In my experience, the degree of recent burns cannot be determined, as a rule, on the first examination, two or three days of observation often being required.

After the swallowing of boiling or corrosive substances, swelling and edema of the throat usually occurs, making deglutition and breathing exceedingly difficult or impossible without mechanical or surgical interference.

Burns arising from sparks or contact with high tension electric wires are generally small, very deep and of the third degree type. They are found at the point of entrance and exit of the current from the body. The burns at point of entrance are frequently so small that considerable search is necessary to find them, while those at point of exit are usually larger, depending on the area of the contacting skin. Sloughs from these burns may be very deep and result in extensive secondary hemorrhage.

Deeper burns of radium and x-ray irradiation are very much alike and cannot, as a rule, be differentiated except from the history. Symptoms of these burns are frequently delayed even for years after exposure due to a slowly progressive, obliterative endarteritis which creates nutritional disturbances and goes on to a fatal ischemia. These deeper burns are usually limited to the area of exposure, and the skin is ordinarily firmly adherent to the underlying tissues. The skin being involved to various thicknesses, shows deep ulceration in patches extending even to the deeper tissues and underlying organs. Many of these ulcers heal and recur again and again. The areas not broken down show no hair and are atrophied often with patches of telangiectasis or of brownish pigment. These ulcers commonly give the appearance of cancer, their edges being thickened, indurated and exerted, and of a grayish red color. The depth of these burns is difficult to determine, exploration being necessary in most cases. Severe deep-seated pain with much sensitiveness is present in all of these burns, irrespective of their size. This is due, no doubt, to irritation of the nerves from suppuration, pressure of scar tissue on them, or possibly injury to the nerves themselves from the irradiation.

* * *

John H. Breyer, M. D. (65 N. Madison Avenue, Pasadena).—*Treatment.* The acute burn is always a surgical emergency. The extent of the scalded or burned surface is a more important factor than the degree. A burn involving one-sixth to one-third of the body surface may prove fatal. Unless definitely limited and of first and second degree type, it is no longer treated by appropriate local treatment, but must be considered as an injury which produces serious systemic changes.

The mortality from burns has been greatly reduced in the last five years following the use of tannic acid and gentian violet dye sprays. The object of treatment should be to relieve pain and to prevent primary shock, toxemia, dehydration, sepsis and complications. The use of ointments is contraindicated in extensive acute burns, because they must be removed before tannic acid solution or gentian violet solution treatment can be instituted. This is time consuming, painful and adds to shock. The tannic acid solution must be made up fresh; twenty-five grain powders of tannic acid can be carried in our emergency bags. One powder added to one ounce of water makes a quickly available five per cent solution. It can be applied by a soft brush. An atomizer may break or get out of order. Gauze compresses soaked in the solution can quickly be applied, covered with waxed paper, and further dressings and wrappings applied to preserve the body heat. The tannic acid solution relieves the pain, but we should not hesitate to give morphia or codein if indicated.

The next step is to plan for the patient's subsequent care. Severe burns can best be treated in a hospital. The room temperature is brought up to body temperature. The patient is put to bed, undressed and placed on sterile sheets and towels. A burn is a wound that should be treated by aseptic precautions as other wounds. A cradle of lights is placed over the bed and covered with a sterile sheet to prevent air currents. The temperature under the cradle is maintained at 85 to 100 degrees Fahrenheit. If gauze has been applied previously it can be removed more painlessly with the aid of tannic acid spray. If an ointment already has been used, a solvent, as ether, is necessary to remove all grease. Morphia or even an anesthetic may be necessary, as this procedure is very painful, though very essential. Blisters should be opened and any dead skin cut away. One should guard against producing any free bleeding. Five per cent tannic acid solution spray is applied every fifteen to thirty minutes until a firm mahogany brown membrane or crust is formed. New blebs are cut away and areas sprayed. Oozing areas are resprayed. Tanning is usually complete in twelve to twenty-four hours. The purpose of this local treatment is to coagulate the burned proteins and prevent the absorption of toxic products. The tanned crusts provide an impervious dressing against chemical, bacterial and mechanical irritation, under which granulation and epithelization can proceed.

From the very beginning of treatment fluids, preferably hot, by mouth is urged. Underhill found that a burn involving one-third of the body surface may result in a fluid loss of 6,000 to 7,000 cubic centimeters a day. The maximum fluid loss is in the first twelve to thirty-six hours. Watch for drop in blood pressure. The concentration of the blood thus produced is estimated by hemoglobin calculations (Newcomer). A reading of 125 is considered dangerous. The blood chlorids also should be checked. Salt solution given intravenously and by Murphy drip is indicated. At least 3,000 to 4,000 cubic centimeters fluids should be given daily. The loss of fluids begins early. It is best to restore the fluid loss in the early period, as it is much easier to prevent concentration than it is to restore concentrated blood to normal. Blood transfusions are life saving when given early in the treatment of severe burns, as well as later when secondary anemia becomes marked. Five per cent glucose may be added to the normal salt solution. Antitetanic serum is indicated in the majority of cases. The development of edema in area of burns must be watched during the first few days. If the crusts produce constricting bands they must be cut.

In five to seven days fluid or pus may collect under the leathery crusts. In seven to fourteen days, the crusts of the deep burns will begin to loosen. Watch the temperature curve and look for pockets. If infection develops under crusts, the pockets must be uncovered or slit, and either vaselin gauze, Dakin's solution or some wet dressing applied. If no infection takes place, the crusts are allowed to remain until they loosen. The less infection that takes place, the less scar tissue will be formed. The denuded area, if large, should be skin grafted as early as possible.

After the crusts have come off and with more or less infection present, it is a problem to get the field ready for skin grafting. My results have been greatly improved since reading the paper entitled "A simple technique for promoting epithelization and protecting skin grafts," by Adalbert G. Bettman, M. D., published in the *Journal of the American Medical Association* December 19, 1931. The formula recommended is called oxyquinolin sulphate scarlet R ointment. It is antiseptic, nonirritating, does not injure healing tissue, and it hastens epithelization. The ointment is used to impregnate wide mesh bandage gauze. It has all the advantages of vaselin gauze and none of the disadvantages. *Recipe:*

	Gm. or Cc.		
Oxyquinolin		6	Gr. x
Chlorbutanol (choretone)	2	4	Gr. xl
Liquid petrolatum	4	0	Dr. i
Scarlet R ointment, 5 per cent	120		Dr. iv

"When 10 per cent scarlet R ointment is used, take two ounces and petrolatum two ounces. The oxyquinolin sulphate and the chlorbutanol are ground separately into fine powders, and then mixed separately with portions of the liquid petrolatum. All the ingredients are then made into a red ointment. The finished ointment is heated until fluid, and rolled gauze bandages, 32 by 44 mesh, or coarser, are immersed in the hot ointment until the entire bandage is thoroughly impregnated, and until all bubbling has ceased. When cool, it is ready for use. The above formula will impregnate completely three ten-yard gauze bandages, two inches wide, or six one inch wide, provided it is heated in a small vessel, as an aluminum measuring cup, such as is ordinarily used in a kitchen. When a bandage has been immersed as described, the outer layers are completely covered, so these are discarded. The warp and woof of the rolled gauze are completely impregnated with the ointment, but the interstices are open."

My difficulty has been in finding rolled bandage of wide enough mesh so that the interstices are open and not filled with ointment. This is necessary to permit easy escape of the serum or pus. The oxyquinolin sulphate scarlet R gauze is applied in single layers covering the entire field. It is then reinforced by layers of dry gauze to quickly carry away the secretions and to protect the wound. The inner dressing is not changed for from two to five days. When it is changed, care must be used not to disturb the epithelium. The outer dressing is changed more often as pooling of secretions must be prevented. This treatment in my cases has definitely shortened the waiting period of preparing the surface for skin grafting. The oxyquinolin sulphate scarlet R gauze makes an excellent protection for skin grafts. They seem to take better with its use. I suggest reading the original article to get more accurately the details.

It is while waiting for infection to subside that the patients, especially if they are children, become anemic and exhausted. Everything possible must be done to maintain their nutrition. It is during this stage that deformities must be guarded against. By applying the above principles in our treatment we will save more lives. But we will be judged by our end results. Early motion should be maintained as far as possible, and the affected member should be dressed in such a position that when activity is begun, function will not be opposed by taut scar tissue. Early skin grafting is very important in preventing contractures and deformities. Guarding against infection from the very onset of our treatment may help in preventing the heavy connective tissue base before skin grafting can be attempted. Pinch grafts may be pushed beneath the granulations and Thiersch grafts may be threaded on a large eye needle and woven in and out among the granulations. Buried grafts grow beneath the granulations. Buried grafts should not be used on exposed surfaces, as the cosmetic result is not good; but they aid in preventing contractures.

It is claimed that when a two per cent gentian violet solution is used instead of tannic acid solution, the crusts are more pliable, and that gentian violet is more antiseptic. It apparently has no harmful effects on tissue cells. The solution likewise must be made up fresh before using. I have had no personal experience with gentian violet dye spray. The literature reports excellent results.

In the extensive severe burn, no one line of treatment can exclusively be carried out. All the ingenuity of the attending surgeon will be called into play. To guard against the hazards of the late period requires careful nursing, constant attention to posture to prevent contractures, and aseptic treatment of the wound to avoid secondary infection. The literature contains many suggestions as to how best to meet the late problems.

Sterling Bunnell, M. D. (516 Sutter Street, San Francisco).—*Reconstruction After Burns.* Following burns, reconstruction is needed for the following conditions: Flexion contractures, disfigurement from contracting cicatrices, disfiguring keloids, impoverishment of limb from encircling contracting cicatrix, cicatrix with itching skin, a tight drawing feeling, aching, stiff joints and recurrent ulceration in center where the blood supply is least, and loss of tissue.

These sequelae of burns can be greatly reduced by selecting the right method in the original treatment. Infection leads to cicatrization. Early sealing of the tissues by tannic acid, cleanliness, mild antiseptic wet dressings, and the occlusive and surfacing dressings, such as parrasin, are accompanied by much less infection than wounds kept filthy by treating with carron oil, various ointments or powders. By adapting the method to the changing condition of the tissues, infection should be reduced and exuberant granulations kept down. The wound should be closed early by Thiersch skin-grafting. These procedures lessen the degree of the eventual cicatrization. Motion in a flexion crease interferes with healing and should be prevented by splinting. Splinting should be continued also after healing to prevent flexion contracture. The surrounding tissues will then grow longer in response to the traction of the contracting cicatrix across the flexion crease of the joint thus held in extension.

Excessive keloid formation and contractures result especially from tissue that has been partially damaged by heat and yet not to the degree of necrosis. If this tissue spans a flexion crease and so is irritated by motion and intermittent tension, keloid of skin and dense cicatrization and contraction of deep tissue result. Some of these typical deformities with which we are familiar, all in line of direction at right angles to flexion creases, are ectropion, scar from ear to ear encircling mouth (from facial expression and opening of mouth), flexion contractures binding chin to chest, arm or thigh to chest, elbow or knee in flexion, and hand or foot in flexion or dorsiflexion. In the hand, keloid is prone to form around the base of palm, contracting the little finger and thumb, and on the dorsum it thickens and shortens the skin so that the nails are drawn back and one cannot make a fist. Even a second degree burn may result in thick keloid and flexion contracture. About the face, projecting edges such as eyelids, eyebrows, alae nasi, tip of nose and helix of ears are often burned off and in need of replacement.

When reconstructing after burns the cardinal principle is to excise where possible all keloid and cicatrix, and to replace with good tissue. If excised down to normal tissue the tendency to cicatrize and contract is gone. Complete excision liberates adjoining, enclosed or distal tissue, restoring its nutrition. Liberal excising with replacement by grafting new tissue free from tension is far better than utilizing cicatricial sliding flaps and straining tissue to do the impossible, or than resorting to niggardly faint-hearted plastics. Grafting new skin is generally better than the swinging of skin flaps, as our problem usually involves an actual defect from either contracture or loss of tissue.

All lines of tension must be broken, as tension makes keloid. A flap of good skin may be swung across a line of tension, or the line may, by a plastic maneuver, be converted into a zigzag. More liberal relief of tension is accomplished by a Wolfe or a pedicled skin graft.

Thiersch skin grafts are poor, especially when on a cicatricial base, but they are useful as temporary covering or to cover areas from which skin flaps are swung, or to liberate skin under tension. In the latter case a line of tension is cut across and the resultant gap is closed by skin graft. Thus a hide-bound strangled limb may be liberated by longitudinal slits, a fist may be closed after transverse slits on its dorsum, or the tension of a large contracting plaque of scar may be relieved by linear slits in two directions. Thicker or split grafts yield softer skin and contract less than do Thiersch, but Wolfe or whole thickness grafts are still better. The latter require freedom from fat, absolute immobility and postoperative compression, as by rubber sponge. Unfortunately they often become pigmented yellow, brown or black. A bed of good tissue is necessary for a Wolfe graft. This is usually present under flexion contractures from burns because, in contrast to flexion contractures from infection, the damaging agent acted from the outside inwards.

The epithelial inlay method of using Thiersch, split or Wolfe grafts by use of wax stent is excellent to replace mucous membranes in orbit, mouth or nose, or in reconstructing an ear or making eyelids.

Tubular pedicled skin grafts are by far the best for replacing skin. They have subcutaneous fat, result in a skin of normal quality, give better relaxation in the surrounding tissues, do not contract and can be placed over a bed of poorly vascularized tissue. They may be obtained from the base of the neck, abdomen, scapular region, upper arm or thigh, but should always be made in the direction of the creases of the skin so as not to produce deforming keloid. Vertical unsightly scars from pedicles in the neck or abdomen are a discredit to surgery. Pedicles should always be tubular or aseptic, that is, without any raw area present, as in the Italian graft; because raw area means sepsis and results in coarse scars. Hematoma should be guarded against by drainage, and the angles of the pedicle should be so fashioned that they will heal per primam and not prolong the time of reconstruction. Pedicles made on one part of the body can readily be waltzed to another by using the forearm or lower leg as the vehicle, if necessary, and allowing two weeks for each new vascularization.

In reconstructing, all lines of scar should be so planned as never to cross a flexion crease at a right angle, or else a contracting keloid will result. They should zigzag across and lie parallel to the crease wherever possible. A flexion crease is there to accommodate for the varying positions of that part of the body, so we should not cross it by scar. This applies even to the borders of pedicled skin grafts. Also the line of a scar should not be too long without being broken by a zigzag, because of the later contraction. In opening out flexion contractures all tissues, blood vessels and nerves, and even joint capsules, will have secondarily contracted, and so will necessitate gradual extension of the joint over a period of weeks. Thiersch skin grafting is then often useful as a temporary covering.

After burns there is usually a tissue defect. This is better realized by picturing in imagination what the normal contour should be. Reconstructing a face requires all the artistry of a sculptor and much knowledge of the healing of tissues besides. It should not be entered into too lightly. It is my conviction that modern taxidermy is a higher art than sculpturing, and that reconstructing a live face with a pleasing and normal appearance, allowing for contractures and tissue changes and also for the varying shapes assumed in the play of facial expression, is even more difficult than either.

The Wassermann Policy of the State Department of Public Health.—Recently, at the suggestion of the Chief of the State Bureau of Laboratories, the California Board of Public Health adopted resolutions defining the conditions under which blood specimens for the Wassermann test would be received by the state laboratory. These conditions differed very slightly from those already in force, and were adopted by the board merely to enable the Chief of Laboratories to correct a very few undesirable conditions in limited areas of the state.

Some unauthorized person has seen fit to go to the expense of printing these resolutions on postal cards and mailing them from Berkeley, possibly with the intention of inducing the doctors who received them to believe that they were an official communication from the state laboratory. These cards, carrying only the bare statements without any explanation to show that they referred to Wassermann tests only, have had the effect of causing much confusion and misunderstanding. It is necessary, therefore, to provide an explanation of the exact meaning of the resolutions above referred to, and this will be done by considering the paragraphs one at a time.

1. "No specimens will be received at all from cities or counties having an approved public health labortory."

This, as well as all the succeeding paragraphs, refers to Wassermann tests only. It means that towns or counties having a public health laboratory are expected to do their own work. This policy has been in force for five years at least. It does not mean that the state will not receive specimens from the local health department which may not be equipped for serology, but that specimens will not be received from private physicians in those communities.

2. "Blood specimens to be examined as a check on treatment will not be received excepting for indigent cases, and from communities not excluded by 1."

This means that we believe our responsibility is limited to the diagnosis of the communicable diseases, and stops short of work done for purposes of treatment after the diagnosis has been made. However, for indigent cases, no distinction will be made.

3. "Blood specimens will be received for purposes of diagnosis only from communities not excluded under paragraph 1."

This is a repetition of our position regarding the distinction between diagnosis and treatment. It means that we receive blood specimens for the Wassermann test for primary diagnosis from any physician or any community in the state, provided that community does not provide the service in its own health department.

4. "The name and post-office address of every Wassermann patient must accompany the sample, and the question as to indigency must be answered."

Our forms have always called for name and address, but the question of indigency on the form is new, and will appear on the next lot of forms printed. We have always requested physicians to limit their demands on us to indigent cases, but the addition of this question to the form means that we intend to guard against imposition.

5. "The chief of the laboratory is authorized to mail a notification to each patient advising him that no charge is made by the state for the examination."

This is to give the chief a weapon where he thinks the physician is engaging in the reprehensible practice of collecting a fee for work which did not cost him anything. Needless to say, this proceeding will not have to be invoked very often, for most medical men are honorable.

6. "Blood specimens (for Wassermann test) will be accepted from all state institutions and county hospitals without reservation other than that county hospitals receiving pay patients may send specimens only from patients who do not pay, so certifying on the form accompanying the specimens."

This is no change from former procedure except that the question of indigency now applies to county hospitals, whereas formerly this was not inquired into. County hospitals may, of course, send bloods from cases for primary diagnosis only, regardless of social status. Syphilis is a very important, infectious, communicable and preventable disease, and it is our duty to aid in its detection the same as for diphtheria or typhoid fever.

7. "The Chief of the Bureau of Laboratories is authorized to refuse service to physicians who do not comply with the above requirements."

This requires no explanation.

A strict enforcement of this present policy will not reduce the Wassermann work of the state laboratory more than 5 per cent, for the reason that 80 per cent of our work is from state asylums, prisons, and reform schools, and from free clinics, health centers, and county hospitals. The balance, since we have long excluded large cities and communities having their own public laboratories, is from practitioners in rural districts who ordinarily have only half a dozen specimens a year.

The chief effect of the regulations (and this is what was aimed at) will be to hold the demands on the state laboratory stationary and enable the chief to combat the few instances of imposition on the department.—*Weekly Bulletin, California Department of Public Health.*

The general objectives of all public health nursing services are:

1. To assist in educating individuals and families to protect their own health.
2. To assist in the adjustment of family and social conditions that affect health.
3. To assist in correlating all health and social programs for the welfare of the family and community.
4. To assist in educating the community to develop adequate public health facilities. — *Wisconsin Health Bulletin.*

No marked economy in school work or increase in the efficiency of instruction is possible if we are to continue to work with poor tools or poor materials. A teacher lacking in health and physical vigor is not likely to prove high in teaching efficiency, and pupils who are suffering from * * * lack of proper care are in no condition to take any large advantage of the instruction which is provided.—Elwood P. Cubberley (1930).—*Weekly Bulletin, California Department of Public Health.*

California and Western Medicine
Owned and Published by the
CALIFORNIA MEDICAL ASSOCIATION
Official Organ of the California and Nevada Medical Associations
FOUR FIFTY SUTTER, ROOM 2004, SAN FRANCISCO

Telephone Douglas 0062
Address communications to the EDITOR, as per the above address.

EDITOR . . . . GEORGE H. KRESS
Associate Editor for California . . . . EMMA W. POPE
Associate Editor for Nevada . . . . HORACE J. BROWN

Advertising Representative for Northern California . . . . L. J. FLYNN, 544 Market Street, San Francisco

Subscription prices, $5.00 ($6.00 for foreign countries); single copies, 50 cents.

Volumes begin with the first of January and the first of July. Subscriptions may commence at any time.

Change of Address.—Request for change of address should give both the old and the new address. No change in any address on the mailing list will be made until such change is requested by county secretaries or by the member concerned.

Advertisements.—The journal is published on the seventh of the month. Advertising copy must be received not later than the 15th of the month preceding issue. Advertising rates will be sent on request.

Responsibility for Statements and Conclusions in Original Articles.—Authors are responsible for all statements, conclusions and methods of presenting their subjects. These may or may not be in harmony with the views of the editorial staff. It is aimed to permit authors to have as wide latitude as the general policy of the journal and the demands on its space may permit. The rigbt to reduce or reject any article is always reserved.

Contributions—Exclusive Publication.—Articles are accepted for publication on condition that they are contributed solely to this journal.

Leaflet Regarding Rules of Publication. — California and Western Medicine has prepared a leaflet explaining its rules regarding publication. This leaflet gives suggestions on the preparation of manuscripts and of illustrations. It is suggested that contributors to this journal write to its office requesting a copy of this leaflet.

EDITORIALS*

NRA AND THE MEDICAL PROFESSION

Medical Profession Is in Accord with the NRA.—The medical profession is in full accord with the aims of the National Recovery Administration, as promulgated by President Roosevelt. Through the NRA it is hoped to reëstablish in the states of the Union economic and social conditions that will permit all citizens to work and live under those environments which Americans feel are necessary complements of modern civilization. Because all citizens are directly or indirectly involved in the development and fulfilment of the NRA program, some comments on its relation to medical practice may be permissible.

* * *

Professions Exempt from NRA.—The NRA exists by virtue of a law passed by Congress, but this law's provisions are primarily intended to apply to trades and industries rather than to the professions. Hospitals and the medical profession, especially physicians in private practice and their technical assistants, can hardly be said to come directly under the terms of the Act. Physicians, however, can voluntarily sign commitments to NRA codes, in so far as they apply.

Regarding employees in doctors' offices, for example, the statement in *The Journal of the American Medical Association* is probably legally sound:

> " . . . 'However, if a physician employs more than two persons as attendants in his office, of the class of clerical employees, accountants, laborers and similar types of help, they do come under the National Recovery Act, with a minimum wage and certain maximum hours of work.' . . . "

* * *

Drug Trade Code.—It is possible for the National Industrial Recovery Act indirectly to affect the interests of the medical profession and hospitals; particularly through the code of competition designed for the retail drug trade. Some of its initial provisions are so worded that hospitals, dispensaries, and physicians who dispense medicines seemingly come within the scope of that code. If such be the final ruling of the National Recovery Administration, it could work considerable hardship on hospitals which might be obligated to employ registered pharmacists under code hours and provisions, to be constantly on service, both day and night. At a time when hospitals, and the patients in hospitals, are having so difficult a problem in meeting their financial obligations, such additional expenses could hardly be said to make living and economic conditions better for hospital personnels or hospital patients. The sales provisions of the retail drug code, if empirically carried out, could also bring about serious financial hardships to hospitals, and to physicians, dentists, nurses, and veterinarians.

* * *

Display of NRA Emblems.—The question of display of the NRA emblem by physicians has also been considerably discussed. The general sentiment seems to be that the display of the Blue Eagle in the office, or on the automobile, of a physician should only be done if the general procedure has been previously sanctioned by the county medical society. This restriction of the use by a physician of the Blue Eagle emblem is based on the principle that the emblem, if shown by a physician who is more financially prosperous than some of his fellows, might work detrimentally to the interests of less fortunate colleagues. The National Recovery Act is not intended to work harm against small enterprises or competitors. The display of the Blue Eagle in one physician's office and not in that of a neighboring colleague, might prejudice some of the lay public against the latter physician who, in that way, could lose patients and patronage; this because all citizens who sign the NRA agreements obligate themselves to patronize only those who are required to and who have likewise signed the NRA code. Since the medical profession does not come within the obligatory and legal jurisdiction of the NRA, it would seem wise for physicians, for the reasons just given, not to voluntarily display the Blue Eagle emblem unless such action has the sanction of their county medical society.

---

* Editorials on subjects of scientific and clinical interest, contributed by members of the California Medical Association, are printed in the Editorial Comments column, which follows.

At the time of this writing, the above seems to be the status of some NRA rulings, at least as they apply to physicians. The representatives of the American Medical Association are keeping in touch with the administrators of the NRA law and codes, and if new developments arise the profession will be made acquainted therewith.

STUDY OF PUBLIC HEALTH PROBLEMS—A PLEA FOR COUNTY SOCIETY COÖPERATION

A Suggestion for Meeting Programs.—Before the current issue of California and Western Medicine reaches its readers, practically all component county societies of the California and Nevada Medical Associations will have resumed their autumn sessions.

This fall it is hoped that the officers and program committees will arrange to have, in addition to the usual scientific papers and discussions, two or more meetings given over to a study of some of the medico-economic problems to which so much space has been given in the official journal during the last several years.

* * *

Certain County Public Health Problems.—In every county of California the care of the indigent sick brings into action certain social, economic and medical factors worthy of the interest and understanding of every member of a county medical society. It cannot be too often repeated that constructive efforts aiming at improvement of methods in the care of the indigent sick (and of elimination from the group of charity patients of citizens who have no right to receive aid from public funds or through the gratuitous services of physicians) necessarily must be based on accurate knowledge of facts and figures. To indulge in verbal criticism of conditions without knowing about the existing institutions of each county for the care of the indigent sick, or understanding their relation to the population and economic resources, as well as to the industrial and social conditions of the community, will not make for much improvement in those places where deficiencies and malfunctions exist. First-hand and accurate knowledge is a primary requisite in any program aiming at reforms.

* * *

Special Studies Have Been Made By Certain County Medical Societies.—In some of the counties of the State the component county societies (notably Alameda, San Diego, Fresno, and San Joaquin) have made fairly comprehensive studies of these problems, presenting in their committee reports important information concerning their respective communities and suggesting or putting into operation plans for betterment, of value not only to themselves, but to all other county societies.

* * *

The State Association Offers Its Services to Component County Societies.—The California Medical Association, acting through its House of Delegates and Council, in the last several years has spent many thousands of dollars in an effort to aid its component county societies to find a satisfactory solution of some of these problems. However, something more than the expenditure of moneys, and even the active interest of a few members, is necessary. What is needed in order to get the results desired by all physicians is the real interest and active support of practically every member of every county society. To hope for so universal a coöperation is, however, little less than utopian. Nevertheless, if coöperative aid from every member is out of the question, it is not too much to expect it from the officers of every county society. For the officers and committeemen of county societies are the members who, for the time being, are the recipients of the honors of their respective organizations; and as the custodians of the interests of their fellows, and of the entire profession, they fail if they do not sense the importance of the medico-economic problems which today face the medical profession in every part of California.

Presidents, secretaries, and program committees of county societies should feel free to write to the California Medical Association Department of Public Relations for advice and aid in working out practical lines of procedure.* If outside speakers are desired, the Department and the Association Secretary, upon request, will make an effort to supply them.

It is hoped that those county societies which, as yet, have not taken steps to carry on studies of their public hospitals, dispensaries, and health departments, will get into line in this important work. Local studies and investigations nearly always can best be made by the local profession.

* * *

Other states—Michigan, for example—have brought out reports of great informative value. California and Nevada must not be laggard. With the coöperation of all component societies of the California and Nevada Medical Associations it should be possible to gather the facts and information upon which to base intelligent and united action, that can bring about the elimination of certain public health evils, which all physicians know to exist.

CALIFORNIA'S FIRST MEDICAL AUTHOR

Another Historical Contribution by Dr. George D. Lyman.—Many members of the California Medical Association have probably given themselves the pleasure of reading the absorbing historical narrative, "John Marsh, Pioneer," written by Dr. George D. Lyman of San Francisco and published somewhat more than a year ago. That excellent service to California biographical literature has now been emphasized by another contribution from Doctor Lyman in his introduction to the reprint of a small book,[†] and having for its title:

---

* The personnel and addresses of all California Medical Association committees are printed in every issue of California and Western Medicine, advertising pages 2, 4 and 6.

CALIFORNIA
As It is, and as It may be;
or,
A Guide to the Gold Region

F. P. Wierzbicki, M. D.
San Francisco, California
Printed by Washington Bartlett
No. 8 Clay Street
1849

By means of this welcome volume, Doctor Lyman calls our attention to the fact that the first book printed in English in California was from the pen of a physician, a medical student of the University of Warsaw, destined to become a Polish exile because of his participation in the revolt against Russia, which may account in part for his later joining in a movement against General Fremont and his authority.

The book by Wierzbicki is full of interest to every citizen of the Golden State who loves his California. But equally appealing is the story of Doctor Lyman in his search for the forgotten grave of Doctor Wierzbicki. Some paragraphs from Doctor Lyman's story of this quest may be well worth the reading, especially by those readers of CALIFORNIA AND WESTERN MEDICINE who will not have an opportunity to peruse the entire book. A few excerpts, too, from the concluding chapter of Doctor Wierzbicki's book, dealing with "Medical Observations Upon the People and Country," are also worthy of quotation.

Doctor Lyman says, in detailing his pursuit, and how he came to make it:

"Felix Paul Wierzbicki, an exiled Pole and a physician," I repeated after him, "and he wrote a guidebook to the gold regions." My curiosity was whetted. I wanted to know more about this medical man who had afforded California literature a starting-point. . . .

. . . That inscription challenged my attention. Could it be possible, I wondered, as I turned the book over, that this little pamphlet was the first book written in English and published in the West? . . .

. . . My survey convinced me of one thing: many a book on the subject of California antedated Wierzbicki's. Many of them had actually been written and published within the confines of California; but Wierzbicki's stood the test. It was the first book written in English to be published not only in San Francisco but in the state. And the further interesting thing about it was that it was conceived by a foreigner and a physician. . . .

. . . From their shelves, I took down a number of auction catalogues. I wanted to find out what sort of a record Wierzbicki's book had made for itself in the auction room. . . .

. . . Still another copy sky-rocketed to $660.

I marveled at the book. At that rate each page of the pamphlet was worth about $10! Every word had a market value of at least five cents! In three quarters of a century Wierzbicki had attained the rank of a best seller.

I found myself more curious than ever regarding Author Wierzbicki. Who was he? What had he been? I began a search for biographical data. . . .

. . . "I want to locate the grave of a Polish doctor—Felix P. Wierzbicki," I told the young woman in the office at Gray's. "Perhaps you have a record of where he was buried. He was born in Poland—so you'll probably find him in the Catholic Cemetery."

I watched as she ran a slender finger down the index of the dead. "No," she said, "not in the Catholic Cemetery. But—here he is, on Lone Mountain." As she spoke she jotted some words on a slip of yellow paper and handed it across to me. I read:

"Laurel Hill—Chain Plot—Tier 3—Grave 55."

I thanked her kindly and hurried away. . . .

. . . Up Pine Street, through the Bush Street gates to Laurel Hill, I sped. At the office—braked to a stop.

"The Chain Plot," I said to the superintendent. "I am looking for the Chain Plot.". . . .

. . . "The Chain Plot," repeated the superintendent, as if endeavoring to recall some long-forgotten part of Lone Mountain. "The Chain Plot? Oh yes—over the hill yonder—beyond the mausoleums of those Washoe millionaires." He indicated a spot to the right. When I still hesitated, "Come along," he said, "I'll show you." . . .

. . . "I must locate his grave," I said conclusively, "and get the dates of birth and death from it. The introduction depends upon them. Without dates," I assured him, "there is no possibility of preparing a suitable introduction." . . .

. . . "The Chains?" I asked. "Where are they?"

"Long since rusted away, and parted—too much fog and damp on Lone Mountain," he said.

"'Tier 3,'" I read from the yellow paper. The superintendent looked about. He couldn't even locate Tier 1. . . .

. . . A clump of myrtle with shining leaves that was cascading over a low white marker, half hiding it, caught my eye.

"Back in a moment," I said to the superintendent as I swept myrtle and sand aside, disclosing a low white stone on which was carved three initials: "F. P. W." I read them again: "F. P. W." . . .

. . . Upward we pulled. The sand loosed its hold. We felt it give. With a sucking noise the square top of a marble slab emerged, ever so slightly, above the level of the mound. I leaned forward to read—shall I confess?—with what exultation:

SACRED TO THE MEMORY
OF
DR. FELIX P. WIERZBICKI

. . . "Higher—higher," I called. "There is more carved below, and I can't read it yet." The superintendent tugged with might and main, but made little impression. The sand sucked at the marker and it slipped out of sight. I went to his assistance. Like two possessed, we struggled with that piece of marble. Perspiration in rivulets coursed down our faces. Sand sunk into our shoes. But little by little the sand slackened its hold. Inch by inch we raised the tablet. Again I leaned over to read:

"Born in Charniawce, Poland, January 1, 1815. Died December 26, 1860. Highly esteemed by all who knew him."

There I had it in a brief statement. What I had sought to know. The summation of Wierzbicki's life. The date of his birth. The period of the grave. And a concise appraisal of his life. The epitaph, not a flowery one such as a man like Wierzbicki would have despised, but a brief, austere one such as he would have approved. I was elated. . . .

* * *

And among the good things handed down to us by Doctor Wierzbicki himself, are the following observations and sentiments:

. . . Those that mix spirits with their tea or coffee, are the only ones who make a rational use of the beverage; as the spirits act as an antidote to either of the drugs, modifying somewhat, their effects. We would not be, however, understood as advocating the use of spirits; far from it. They are all good in their places as medicines only. As a substitute for tea or

---

[†] Present edition from The Grabhorn Press, 510 Pine Street, San Francisco.

> coffee, chocolate may be used advantageously; it is not a drug; it possesses no remedial powers, in the proper sense of the word; it is only alimentative, nourishing by its natural oil and substance. . . .
>
> . . . California has never seen so great a mortality as within the last year, among the strangers who arrived recently; and some would lay the blame to the climate. We, however, would deny it in toto, and assert it is the fault of the patient and his physician in most cases. The diseases that may be said to be incident to the climate, are tractable, and we had the good fortune to lose not a single case as yet, be it diarrhea, dysentery, fever and ague, or what may be called California fever—a confused type of all fevers. But we have treated our patients a little differently from the routine practice, from the injunctions of books and professors. . . .
>
> . . . In fever and ague, we are not fond of using much sulphate of quinine, except merely to interrupt the periodicity of the disease, for which great doses are not required; this done, we cleanse the bowels thoroughly, then pay attention to the diet, which should be nourishing but light. A strict attention on the part of the patient to this rule, for two or three weeks, improves him rapidly, and guards against a relapse. Under such a course of treatment as we have here briefly indicated, and which an experienced physician can easily comprehend, our patients recover without much delay. And it is our inmost conviction that the diseases of the country are not at all formidable, if properly managed; and that the climate is not the cause of the mortality that lately has been committing such a havoc in the ranks of the strangers. In our opinion, the climate of California is one of the most healthy, as a general rule, if people understand how to adapt themselves to it. . . .
>
> . . . There is always a class of people who find fault with any climate, because it is the most convenient cloak for their follies, or an excuse for their ignorance in the art of preserving health. . . .

EDITORIAL COMMENT*

IMMUNOLOGIC EFFECTS OF ALKALINE DIETS

IX†

Several special diets have been proposed as adjuvants in the treatment of certain chronic infections, the purpose of which is a therapeutic alteration in acid-base equilibrium. Thus far, however, such dietary therapies have been largely empirical, few immunologic studies of acid-base equilibrium having been made on laboratory animals. Doctor Bonanno's [1] currently reported data are, therefore, of basic interest.

Rabbits and guinea-pigs were used by the Turin investigator, their normal acid-base equilibrium being altered by the addition of certain calcium or sodium salts to routine diets. The results with the acid diets were in accord with clinical experience: within from fifteen to thirty days there was a pronounced lowering of phagocytic power and of the bactericidal power of the blood serum, which latter was associated with a reduced complement titer. Anaphylactic susceptibility was increased. Specific antibody production was inhibited.

The results from the alkaline diets, however, were contrary to clinical expectation, since experimental alkalosis was rarely if ever of immunologic benefit to the animal. In a typical test of this type, Doctor Bonanno's control or normally fed guinea-pigs were injected intraperitoneally with a routine dose of low virulent tubercle bacilli; and these guinea-pigs survived, on an average, for ninety-five days. All of the alkali-fed guinea-pigs injected with the same dose died between the twentieth and the forty-second day.

As a general conclusion from his data, Doctor Bonanno was forced to the opinion that any experimental variation from normal acid-base equilibrium is an immunologic disadvantage to normal animals. If this is equally true in clinical medicine, immunologic benefits can be expected only in cases in which the prescribed diets correct preëxisting acid-base abnormalities.

Stanford University.

W. H. Manwaring,
Palo Alto.

PERINEPHRITIS

Perinephritis is generally secondary to infection in the kidney (pyelitis, pyelonephritis, pyonephrosis) and is in proportion to the intensity of this infection. Perinephritis of extra-renal origin is rare. The cure of perinephritis depends upon the eradication of the causative infection in the kidney. Perinephritis is frequently followed by more or less fibrous tissue reaction, with resultant perinephric adhesions or sclerosis. The term "perinephric adhesions," and not "perinephritis," expresses the true pathology after infection has been eradicated from the kidney. Perinephric adhesions, as a rule, have no significance as a cause of pain. In fact, nephropexy is done with the avowed purpose of forming adhesions to hold the kidney in place. Tuberculous kidneys are frequently surrounded by the densest adhesions, yet we frequently find that these patients never have any pain referable to the kidney, just as patients with extremely movable kidney may be entirely devoid of pain. Perinephritis, or more correctly speaking, perinephric adhesions may cause pain under the following conditions: in the adhesions are so formed as to constrict the kidney pedicle, or by contraction of scar tissue to cause torsion or disturb the normal position of the kidney with consequent interference of the renal circulation, or to interfere with urinary drainage by constricting or obstructing the ureter or pelvis of the kidney. The latter presupposes perinephritis associated with peripyelitis or periureteritis. Diagnosis depends upon demonstration by horizontal and vertical pyelography of evidence of dilatation, or interference with the motility of ureter, pelvis or calyces, and the presence or absence of malposition, torsion or immobility of the kidney. In the hands of an overzealous specialist who can detect abnormalities in all pyelograms, nearly all patients are now between the devil and the deep blue sea: either the kidney is afflicted with immobility, malposition or torsion as shown by prone and vertical pyelography, and therefore has perinephritis requiring nephrolysis, or the kidney has too great a range of mobility and is, therefore, a nephroptosis requiring nephropexy. Such radicalism cannot be too strongly condemned. These cases require the most careful differential diagnosis and judgment. Every other possible cause of pain in the kidney region should be carefully ruled out. Once a definite diagnosis has been made, treatment calls for equally careful judgment as to whether such benign procedures as eserin medication, physiotherapy, ureteral dilatation, and ptosis belt will meet the situation, or whether surgical treatment may be indicated. Surgery is indicated as a last resort in a small percentage of cases. Here again the judgment and skill of the well-trained urologist are essential in determining whether the procedure of choice is ureteropyelonephrolysis, renal sympathectomy, nephropexy, or a combination of these measures. Of course, perinephric adhesions reform as a direct result of operation, but usually there is no recurrence of pain.

---

* This department of CALIFORNIA AND WESTERN MEDICINE presents editorial comment by contributing members on items of medical progress, science and practice, and on topics from recent medical books or journals. An invitation is extended to all members of the California and Nevada Medical Associations to submit brief editorial discussions suitable for publication in this department. No presentation should be over five hundred words in length.

† Part I of this series was printed in the February CALIFORNIA AND WESTERN MEDICINE, page 116; Part II in March, page 188; Part III in April, page 275; Part IV in May, page 380; Part V in June, page 447; Part VI in July, page 59; Part VII in August, page 133; Part VIII, in September, page 206.

[1] Bonanno, A. M.: Zeitsch. f. Immunitätsforsch, 77:19 (Nov.), 1932.

450 Sutter Street.

Thomas E. Gibson,
San Francisco.

CERTAIN RELATIONSHIPS BETWEEN THE PANCREAS AND THE LIVER IN CARBOHYDRATE METABOLISM

Experimental work on the relationship of insulin to liver glycogen has shown that in depancreatized animals the liver becomes glycogen-free in about forty-eight hours after the pancreatectomy. If, following the complete disappearance of glycogen from the liver of a depancreatized animal, insulin with sugar is given, there occurs a more or less gradual rise in the liver glycogen toward normal. It is of interest to note that under the same conditions, when the liver is glycogen-free, the administration of sugar without insulin is followed by some glycogen in the liver up to a maximum quantity of about one per cent. Even though this amount is below the normal quantity, it brings to our attention the fact that a limited glycogen storage can take place in the liver even though there is no insulin from the pancreas. If insulin is given along with the sugar, a greater degree of glycogen formation occurs, so that the liver glycogen may reach a normal level.

The blood sugar in these depancreatized animals remains persistently high until insulin is given, following which it may be diminished to almost any low level, depending upon the amount of insulin given. When a certain minimum blood sugar level is reached, the characteristic hypoglycemic reaction occurs. It is interesting to note that the hyperglycemia of the depancreatized animals persists in the absence of food intake, and that actual hypoglycemia occurs when the liver is removed along with the pancreas. It can therefore readily be concluded that the liver is responsible for the hyperglycemia of depancreatized animals, not only due to the fact that it does not store glycogen, but because it forms glucose from other products such as proteins and fats.

It is of further interest to find that, even though hypoglycemia occurs following the removal of the liver with the pancreas, the rate of reduction of the blood sugar will be more rapid when insulin is given. The rate of disappearance of sugar from the circulation of the dehepatized and depancreatized animals, following the administration of insulin, is so much faster than would occur if no insulin were given, that there can be no question that the liver is not essential for the hypoglycemic action of insulin.

When a normal dog is placed upon a starvation program, there occurs a steady decrease in liver glycogen. With continuous sugar infusion of about 0.8 milligram of sugar per kilogram of body weight per hour into the portal vein, the hepatic artery, or the femoral vein, a rise in liver glycogen occurs. In both instances the distribution of glycogen in the liver remains uniform. These are quite well recognized facts. It is also fully recognized that the injection of epinephrin into a normal animal lowers the liver glycogen content due to a definite glycogenolysis, which occurs with a resultant possible hyperglycemia. It is noteworthy that this particular reaction to the epinephrin is not prevented by insulin.

Contrary to expectation, most investigators find that the injection of insulin with, or without sugar, into a normal animal produces a drop in liver glycogen content. One group of investigators finds that if slow infusions of sugar and insulin be given to normal dogs, glycogen storage in the liver can be practically prevented. With this in mind, it may be quite readily concluded that the diabetic dog and the normal dog do not give the same responses to insulin.

W. E. Macpherson,
Loma Linda.

Today is an undoubted swing back toward the simple diet, and a growing skepticism toward the food fads. There is still much to be done, however, in the way of education, regarding the importance of avoiding food fads and the necessity for a general well-balanced diet. Diet fads, food fads, no butter, no potatoes, no meat, no bread, are undoubtedly the underlying causes of many a person's ills, both bodily and mentally. It is felt that the best way to meet the situation is to let research answer (Surgeon General H. S. Cumming).—*Weekly Bulletin, California Department of Public Health.*

I hope that overemphasis upon normal dieting is a passing fad and that our people, especially our younger women, will learn the importance of having well-nourished bodies and brains. For that they must eat well-balanced diets of sufficient quantities of the various constituents, among which none is more important than bread (Surgeon General H. C. Cumming).—*Weekly Bulletin, California Department of Public Health.*

We are paying fifty times as much for education in the three R's as for health work.—Louis I. Dublin (1928).

STATE MEDICAL ASSOCIATIONS

This department contains official notices, reports of county society proceedings and other information having to do with the state associations and their component county societies. The copy for the department is edited by the state association secretaries, to whom communications for this department should be sent. Rosters of state association officers and committees and of component county societies and affiliated organizations, are printed in the directories noted under Miscellany, on the front cover index.

CALIFORNIA MEDICAL ASSOCIATION

GEORGE G. REINLE .... President
CLARENCE G. TOLAND .... President-Elect
EMMA W. POPE .... Secretary-Treasurer

Resolution Adopted by the Council at Its Meeting September 30, 1933

Resolved, That the Council recognizes roentgenologists and other doctors of medicine specializing in pathology and clinical laboratory diagnostic methods as consultants and not technicians.

COUNCIL MINUTES

Minutes of the Two Hundred and Nineteenth Meeting of the Council of the California Medical Association

The following minutes were approved by the Council at its two hundred and twentieth meeting, held at Los Angeles, September 30, 1933:

Held in the offices of the California Medical Association, Room 2004, 450 Sutter Street, San Francisco, Saturday, May 27, 1933, at 10 a. m.

Present. — Doctors George G. Reinle, president; Clarence G. Toland, president-elect; Edward M. Pallette, Speaker; T. Henshaw Kelly, chairman of the Council; and Councilors W. W. Roblee, Carl R. Howson, Henry J. Ullmann, Fred R. DeLappe, Alfred L. Phillips, Karl L. Schaupp, Charles E. Schoff, George G. Hunter, C. O. Tanner, William H. Kiger, M. R. Gibbons, J. B. Harris; Charles A. Dukes, chairman of Committee on Public Relations; George H. Kress, editor; Emma W. Pope, secretary-treasurer; and Hartley F. Peart, general counsel. Doctors Walter B. Dickie and Daniel Crosby were also present.

Absent. — Doctors O. D. Hamlin and Henry S. Rogers.

1. **Call to Order.**—The meeting was called to order by the chairman, T. Henshaw Kelly.

2. **Chairman of Committee on Public Relations.**—The secretary stated that the Committee on Public Relations had elected Charles A. Dukes as chairman of the Committee on Public Relations.

Action by the Council.—On motion of Hunter, seconded by Phillips and unanimously carried, the following resolution was adopted:

Resolved, That the election of Charles A. Dukes as chairman of Public Relations be approved by the Council.

The chairman then announced Doctor Dukes as a member of the Council.

3. **Financial Statement.** — Financial report for the month of March, 1933, was presented by the secretary and approved by the Council.

4. **Auditing Committee.**—The chairman of the Council stated that in accordance with constitutional provision, he had appointed as member of the Auditing Committee Doctors Karl L. Schaupp, Oliver D. Hamlin and Morton R. Gibbons, and had named Doctor Schaupp as chairman.

The membership of the committee was approved as presented.

5. **Arrangements Committee for 1934.**—The chairman stated that in accordance with Chapter IV, Section 6a, of the Constitution, which provides that the chairman of the Council, subject to the approval of the Council, shall, at least six months before the regular annual session, appoint a committee on arrangements, he had conferred with Doctor Roblee and had appointed as members of the committee William W. Roblee (chairman), Hervey S. Faris, G. Wayland Coon, Bon O. Adams, and Arthur W. Walker, all of Riverside.

6. **Retired Membership.**—A request from the Santa Cruz County Society was presented that retired membership in the California Medical Association be granted to Grant Hatch of Santa Cruz.

Action by the Council.—On motion of Hunter, seconded by Kress, and unanimously carried, the following resolution was adopted:

Resolved, That Grant Hatch, M. D., Santa Cruz, member of the Santa Cruz County Medical Society, be granted retired membership in the California Medical Association.

7. **Nineteen Hundred and Thirty-Four Annual Session.**—(a) *Length of Annual Session.* The secretary reported that at the luncheon meeting of the Program Committee and section officers during the Del Monte annual session discussion was had of the advisability of an intensive three-day session in lieu of the present four-day session; that the section meetings be held from 2 to 5 on Monday, from 9 to 11 on Tuesday, with Tuesday afternoon free for entertainment, and that section meetings be held both in the morning and afternoon on Wednesday.

Action by the Council.—On motion of Hunter, seconded by Schaupp, and unanimously carried, the following resolution was adopted:

Resolved, That the 1934 annual session be limited to a three-day session.

(b) *Date of Annual Session.*—Discussion was had of the date of the next annual session, and on motion of Phillips, seconded by Reinle and unanimously carried, the following resolution was adopted:

Resolved, That the date of the next annual session be set as April 30, May 1 and 2, 1934.

(c) *Scientific Exhibits.*—The secretary stated that the Program Committee felt that it was desirable to have a Committee on Scientific Exhibits to solicit and to determine the merits of exhibits offered for presentation at annual sessions and to arrange the details of the display of such exhibits.

Action by the Council.—On motion of Reinle, seconded by DeLappe, and unanimously carried, the following resolution was adopted:

Resolved, That the chairman of the Council appoint a committee on scientific exhibits, consisting of five members, that shall have charge of the solicitation, acceptance and arrangements for scientific exhibits at the annual session.

8. **State and County Fairs.**—The secretary read a letter from the Director of the Department of Public Relations stating that the total cost of exhibits at the Sacramento State Fair and the Los Angeles County Fair in 1932 was $1,088.30 and that similar exhibits this year would cost considerably less since the material purchased last year was still on hand. Doctor Dickie suggested that a portion of the income from the Herzstein bequest be used to defray the expense of such exhibits.

Action by the Council.—On motion of Ullmann, seconded by Gibbons and unanimously carried, the following resolution was adopted:

Whereas, The exhibit of this Association for presentation at the state and other fairs, is educational and informational and an effective means of combating quackery; now, therefore, be it

Resolved, That such an exhibit be held in 1933, and that a portion of the income from the Herzstein bequest necessary to defray the expense is hereby allocated.

9. **Fall Council Meeting.**—Discussion was had of the date of the fall meeting of the Council to be held at Los Angeles, and on motion of Kress, seconded by Reinle, and unanimously carried, the chairman of the Council was authorized to set the date of the meeting.

10. **California and Western Medicine.**—A letter was presented by the secretary from an advertiser of long standing suggesting that a greater discount be allowed on yearly advance payment on yearly advertising contracts. It was stated that at present a discount of 5 per cent was allowed for advance payments on monthly and yearly contracts.

Action by the Council.—On motion of Ullmann, seconded by Gibbons, and unanimously carried, the following resolution was adopted:

Resolved, That a discount of 10 per cent be allowed on full advance payments for yearly advertising contracts.

11. **Southern Advertising Agent.** — The secretary stated that in accordance with councilor action, Mr. A. A. Butterworth had been advised that his contract covering advertising in the southern territory was terminated.

The editor stated that he had contacted Mr. Butterworth and had secured his approval of an abrogation of the six months' notice requirement for termination of contract. Doctor Kress then read a letter from Mr. Butterworth stating that he was setting June 15, 1933, as the effective date of the termination of the contract to provide for the final decision on four advertising contracts now pending. Doctor Kress stated that it was his understanding and Mr. Butterworth's that he would be allowed commission on contracts secured by him up to June 15, 1933.

Action by the Council.—On motion of Kress, seconded by Reinle and unanimously carried, the following resolution was adopted:

Resolved, That the general counsel be instructed to write Mr. Butterworth regarding the details of the termination of his contract.

Doctor Kress stated that it was his understanding that the southern councilors and the editor were empowered to confer with Doctor Wilson and the advertising agent for the Los Angeles County Bulletin regarding the handling of advertising in the southern territory.

Action by the Council.—On motion of DeLappe, seconded by Hunter and unanimously carried, the following resolution was adopted:

Resolved, That the southern councilors and the editor be empowered to make tentative arrangements for the handling of advertising in the southern territory, and that a report be submitted to the Executive Committee, the Executive Committee to have power to act.

12. **Publication costs.**—The editor read a letter from the James H. Barry Company stating that commencing with the May number of California and Western Medicine they would deduct an additional $50 from the base price heretofore charged.

13. **Director of Department of Public Relations.**—It was stated that the Committee on Public Relations at a meeting held today had recommended that Walter M. Dickie be retained as director of the Department of Public Relations.

Action by the Council.—On motion of Schaupp, seconded by Gibbons and unanimously carried, the following resolution was adopted:

Resolved, That the recommendation of the Committee on Public Relations that Walter M. Dickie be appointed director of the Department of Public Relations for the ensuing year be approved and that Walter M. Dickie be and is hereby appointed director at the salary approved by the House of Delegates, viz., $400 per month.

14. **Expert Medical Testimony.** — Doctor Hunter stated that the president of the Los Angeles society had appointed a committee to investigate and evolve a plan whereby the handling of medical testimony in courts could be improved. As a member of the Los Angeles committee, Doctor Hunter asked that the chairman of the Council be instructed to appoint a committee of some one member with which the Los Angeles committee may confer.

Action by the Council.—On motion of Hunter, seconded by Ullmann and unanimously carried, the following resolution was adopted:

Resolved, That the Council recommend to the Department of Public Relations that it coöperate with the Bar Association in the matter of improvement of the conditions relating to expert medical testimony.

15. **Membership Campaign.**—Discussion was had of the advisability of increasing the membership of the Association. Doctor Howson explained the present scheme of increasing membership in Los Angeles County by offering a commission on the first year's dues to the member securing the new member.

Action by the Council.—On motion of Pallette, seconded by Schaupp and unanimously carried, the following resolution was adopted:

Resolved, That the Council recommend to the Department of Public Relations that during the next year it conduct a campaign to secure desirable members for the California Medical Association in conference with the Standing Committee of the State Society and the local committees in the various counties.

16. **Medical Publicity.**—Doctor Howson stated that a valuable source of publicity was being overlooked in the public libraries of the state; that he had had occasion to investigate recently and had found that the public libraries in the southern part of the state had very few authoritative books on popular health and medical subjects, such as antivivisection, sun bathing, etc. Doctor Howson suggested that the Department of Public Relations compile a list of desirable books.

Action by the Council.—On motion of Howson, seconded by Ullmann and unanimously carried, the following resolution was adopted:

Resolved, That the Council recommend to the Department of Public Relations that it compile a small list of books and journals on health and hygienic subjects suitable for placement in public libraries and that if in its judgment it seems desirable, it recommend that a portion of the Herzstein bequest be used for the purchase and such placement of these books.

Action by the Council.—On motion of Ullmann, seconded by Gibbons and unanimously carried, the following resolution was adopted:

Resolved, That the Committee on Public Relations arrange for the placing in all State and County Fair exhibits at which the Association exhibits, placards or suitable signs listing the names of desirable books and urging that the public ask the libraries to carry same.

17. **Medical Service Plans.** — The general counsel stated that the Committee on Public Relations had discussed type "D" of the Medical Service plans and had recommended that it be retained as a desirable type of service.

Action by the Council.—On motion of Gibbons, seconded by Ullmann and unanimously carried, the following resolution was adopted:

Resolved, That the action of the Committee on Public Relations recommending that type "D" be retained as a suitable type of service, be approved.

Discussion was then had of the possibilities for coöperation and control of hospitals offering this service. It was suggested that it might be desirable to include a provision in the approval stating "provided that adequate representation of the county medical association is given in the administration board of such plan."

It was pointed out that the type of service offered under plan "D" must have the approval of the Council and the Committee on Public Relations before becoming effective.

In accordance with the suggestion of the Committee on Public Relations, on motion duly made, seconded and unanimously carried, the following resolution was unanimously adopted:

Resolved, That Principle 5 be changed to read as follows: "Professional service under any plan adopted shall be limited to the membership of a component county society or groups thereof, and no plan for medical and/or hospital service shall be recognized until it has received the endorsement of the Council after its approval by (1) the affirmative vote of two-thirds of the members of such society provided in the case of a county society having a membership of 450 or over, the affirmative vote of two-thirds of the members voting, shall be sufficient for approval; and (2) the Committee on Public Relations. The vote of the membership of the component society herein provided for shall be had at a meeting of the members or by mail or both only after due written notice of the details of the proposed plan and the time and place of any such meeting or vote shall have been given to all members."

The general counsel then spoke of the progress being made in Alameda County and the activities in San Mateo County.

Doctor Crosby, member of the Committee on Public Relations, being present, spoke of the probable problem that would arise over installation of service in Alameda County to certain localities in Contra Costa County. It was pointed out that the same problem was present in San Francisco and San Mateo and elsewhere in the state.

Action by the Council.—On motion of Gibbons, seconded by Ullmann and unanimously carried, the following resolution was adopted:

Resolved, That the president of the Association, the chairman of the Council and the chairman of the Committee on Public Relations be instructed to formulate an additional provision providing for coöperation between two or more county societies in any such plan.

It was pointed out that Alameda County was nearing the completion of the plans for its service and wanted the approval of the Council and the Public Relations Committee before proceeding, and that the next Council meeting would not be held until fall.

Action by the Council.—On motion of Pallette, seconded by Kiger and unanimously carried, the following resolution was adopted:

Resolved, That the Executive Committee be authorized to act for the Council on any plan after said plan has received the approval of the Committee on Public Relations.

18. **Publicity Agent.**—The president presented the publicity which had been secured in the various newspapers throughout the state on the Del Monte session. Doctor Reinle stressed the value of the proper release of medical news and suggested that Mr. Howard Hill be secured as part-time publicity agent for the Association for the ensuing year at an expense of $500.

Action by the Council.—On motion of Ullmann, seconded by Phillips and unanimously carried, the following resolution was adopted:

Resolved, That the Association negotiate and secure the part-time services of Mr. Howard Hill at a salary of $500 for the present fiscal year and that such expenditure be made from the income of the Herzstein bequest.

19. **Legislation.** — Doctor Harris, chairman of the Committee on Public Policy and Legislation, submitted a detailed written report on legislation. At the request of the editor, the report was ordered published in the next issue of the JOURNAL.

Doctor Harris then reported verbally on the main bills of medical interest.

The chairman of the Council then read a letter which had been addressed to him by the executive secretary of the California Public Health League of Los Angeles, Mr. Ben Read.

Action by the Council.—On motion of Hunter, seconded by Phillips and unanimously carried, the following resolution was adopted:

Resolved, That the letter of Mr. Read re Doctor Harris' service to the medical profession, be published in the JOURNAL.

20. **Los Angeles County Medical Association Membership.**—A letter was read from the Los Angeles County Medical Association asking that the State Association grant a similar rebate on the dues of new members to that granted by the Los Angeles County Medical Association, *i. e.,* 25 per cent of the first year's dues.

Action by the Council.—On motion of Pallette, seconded by Howson, the following resolution was adopted:

Resolved, That in any county society where a certain percentage, not to exceed 25 per cent of the first year's dues of new members, is given to members of the society for securing such new members, the state society will pay to the county society for transmittal to the members who obtained the new members a like percentage of the first year's dues for the present fiscal year only.

A vote was then taken on the motion. Five voted in the affirmative and ten in the negative. Motion defeated.

21. **Resolution No. 4—Corporate Practice.** — The secretary read Resolution No. 4, adopted by the House of Delegates at the Del Monte session, instructing the Council to take such action as it deems proper to enforce the interpretation of the Medical Practice Act as interpreted by the Blake decision.

Doctor Schoff explained the activities of the Board of Medical Examiners. Full discussion was then had.

It was the sense of the Council that the Association coöperate with the Board of Medical Examiners in any way possible.

22. **Resolution No. 2—Health Insurance.**—Resolution No. 2 relative to the appointment of a committee of the Senate to investigate and report on health insurance, and the appointment of a similar committee by the Council was read.

Action by the Council.—On motion of Gibbons, seconded by Phillips and unanimously carried, the following resolution was adopted:

Resolved, That a committee of three be appointed by the chairman that shall have charge of all matters in connection with the study, and that it shall be authorized to coöperate with all departments of the Association and shall report progress to the Council.

The membership of the committee named, after discussion by the Council, was Doctors Frederick Gundrum of Sacramento, Carl R. Howson of Los Angeles, and T. Henshaw Kelly of San Francisco.

23. **Offices of Association.** — The general counsel stated that the Four Fifty Sutter Corporation had authorized him to state that it would make a reduction of 20 per cent on the present rental price of Room 2039, occupied by the Department of Public Relations.

The secretary reported that after June 15, one stenographer only would be retained by the Department of Public Relations and the Cancer Commission.

24. **Druggists' Association.** — Morton R. Gibbons presented a letter regarding liquor prescriptions.

Action by the Council.—On motion of Gibbons, duly seconded and carried, the matter was tabled.

25. **Membership of the American Medical Association House of Delegates.**—The proposed amendment to the Constitution of the American Medical Association, Section 2, Article 5, which would make all presidents of state associations members of the House of Delegates was discussed. Members of the Council felt that the addition of fifty-four members to the House of Delegates was not desirable.

It was the sense of the Council that the California delegates be advised that the Council feels that the addition of presidents of state societies as members of the House of Delegates is an unwise change in the Constitution of the American Medical Association.

26. **Adjournment.**—There being no further business the meeting adjourned.

T. Henshaw Kelly, *Chairman.*

Emma W. Pope, *Secretary.*

* * *

EXECUTIVE COMMITTEE

Digest of the Minutes of the One Hundred and Thirty-Eighth Meeting Held at San Francisco, August 19, 1933

1. Call to order.

2. Financial statements for May and June, 1933, were presented and approved.

3. Request from the Federal Relief Administration for coöperation of the California Medical Association was presented. Discussion and approval was had of tentative plans for home care of persons on federal relief for submission to the Emergency Relief Administration.

The Executive Committee authorized a committee, consisting of the president, president-elect, chairmen of the Council, the Executive Committee, the Committee on Public Relations, the Committee on Public Policy and Legislation, and the secretary, to act for the California Medical Association to coöperate with the Emergency Relief Administration, if desired by it, through the various component county medical societies in aiding the development of medical care by the county relief committees.

The committee authorized Doctors Harris, Schaupp, and Kelly to present, in proper form, the suggested plan for home medical care of the unemployed on relief to the Emergency Relief Administration.

4. The general counsel presented excerpts from an opinion rendered by the Attorney General concerning interpretation of the clinic bill. The Attorney General's opinion sustained the legality of the law.

5. The general counsel submitted a report on the present status of county hospitals.

6. A letter from the secretary of the Pacific Roentgen Club was presented. Recommendation by the Executive Committee that members of the California Medical Association place themselves under the blanket NRA code if any are required to do so under the classification of the Act, and disapproval of members allying themselves with lay laboratories and x-ray groups in associations for the formulation and submission of codes. The secretary was authorized to transmit the action of the Executive Committee to all component county societies.

7. Adjournment.

Karl L. Schaupp, *Chairman.*

Emma W. Pope, *Secretary.*

EXTENSION LECTURE PROGRAM

* * *

1. INDEX TO SUBJECTS

* * *

Dermatology and Syphilology.

Lunsford, C. J.
Soiland, Albert
Templeton, H. J.

Eye, Ear, Nose and Throat.

Barkan, Hans
Hosford, George N.

General Medicine.

Hurwitz, Samuel H.
Kruse, Fred H.
Lisser, Hans
Miller, Hyman
Piness, George
Pulford, D. Schuyler
Read, J. Marion
Rowe, Albert H.
Shepardson, H. Clare
Trimble, H. G.
Van Zwalenburg, C.

(a) Cardiology

Kilgore, Eugene S.
Langley, Robert W.
Newman, W. W.
Sampson, John J.

(b) History of Medicine

Codellas, Pan S.
Leake, C. D.

(c) Legal Medicine

Bolin, Zera E.

(d) Tropical Medicine

Reed, Alfred C.

(e) Tuberculosis

Pierson, Philip H.
Pindell, M. L.
Rosencrantz, Esther
Trimble, Harold G.
Voorsanger, W. C.

General Surgery.

Brown, A. Lincoln
Gehrels, Ernst
Gilcreest, Edgar L.
Leake, C. D.
Mentzer, Stanley H.
Sampson, John J.
Shephard, John H.
Soiland, Albert
Trimble, H. G.
Van Zwalenburg, C.
Yoell, Rodney A.

(a) Brain and Spinal-Cord Surgery

Gerstle, Mark

(b) Neurologic Surgery

Glaser, Mark Albert

(c) Plastic Surgery

Bames, H. O.
Kiskadden, W. S.
O'Connor, Gerald B.
Pierce, George W.

(d) Thoracic Surgery

Brown, A. Lincoln

Neuropsychiatry.

Gerstle, Mark

Orthopedics.

Gottlieb, A.
Lowe, Frank A.

Pathology.

Bolin, Zera E.
Kellogg, W. H.

Pediatrics.

Sweet, Clifford

Pharmacology and Chemistry.

Leake, C. D.

Radiology.

Pindell, M. L.
Soiland, Albert

Urology.

Ferrier, Paul A.
Redewill, Francis S.
Wesson, Miley B.

* * *

2. INDEX TO SPEAKERS

* * *

H. O. Bames, M. D., 512 Pacific National Building, Los Angeles.

1. Deformities of Facial Features—Their Surgical Correction. (Lantern slides.)
2. Deformities of Body Contour—Their Surgical Correction. (Lantern slides.)

Hans Barkan, M. D., Stanford University Hospital, San Francisco.
1. Present Methods of Operation on Retinal Detachment.
2. Modern Conceptions of Strabismus Operations.
3. Unusual Aspects of Industrial Injuries to the Eye.

Zera E. Bolin, M. D., 450 Sutter Street, San Francisco.
1. The Economics of Pathology.
2. The Medical Expert.
3. The Newer Knowledge of Laboratory Diagnosis.

A. Lincoln Brown, M. D., Medico-Dental Building, 490 Post Street, San Francisco.
1. Surgery in Pulmonary Tuberculosis. (Lantern slides.)
2. Surgery of Lung Abscess, Empyema and Bronchiectasis. (Lantern slides.)
3. Postoperative Care. (Lantern slides.)

Pan S. Codellas, M. D., Schroth Building, 240 Stockton Street, San Francisco.
1. Medicine in the Sacred Books of the Leading Religions of the World.
2. The Birth, Growth and Importance of Byzantine Medicine.
3. The Theory and Practice of Alexandrian Medicine.

Paul A. Ferrier, M. D., Professional Building, 65 North Madison Avenue, Pasadena.
1. Present Status of Prostatic Resection.
2. Care of Prostate by General Practitioner.

Ernst Gehrels, M. D., 734 Medico-Dental Building, 490 Post Street, San Francisco.
1. Surgical Management of Gastric and Duodenal Ulcer.
2. Choice of Procedure in Resection of Large Intestine.
3. Preservation of Sphincter in the Radical Operation for Cancer of the Rectum.

Mark Gerstle, M. D., Union Square Building, 350 Post Street, San Francisco.
1. Multiple Sclerosis.
2. Spinal Cord Tumors.
3. Polyneuritis—Newer Conceptions of Its Pathogenesis.

Edgar L. Gilcreest, M. D., Fitzhugh Building, 384 Post Street, San Francisco.
1. Unrecognized Injuries of the Shoulder and Arm.
2. Ruptures and Tears of Muscles and Tendons of the Lower Extremity.
3. Traumatic Aneurysm and Arteriovenous Fistula.

Mark Albert Glaser, M. D., 356 South Rossmore Street, Los Angeles.
1. Encephalography.
2. Differential Diagnosis of Surgical and Nonsurgical Diseases of the Nervous System.
3. Differential Diagnosis of Facial Pains.

A. Gottlieb, M. D., 1240 Roosevelt Building, 727 West Seventh Street, Los Angeles.
1. Obscure Foot Lesions.
2. Hallus Valgus.

George N. Hosford, M. D., 1242 Medico-Dental Building, 490 Post Street, San Francisco.
1. The O'Connor Operation. (Motion picture with lecture.)

Samuel H. Hurwitz, M. D., 1214 Medico-Dental Building, 490 Post Street, San Francisco.
1. Value of Intratracheal Iodized Oil in Chronic Intractable Asthma.
2. Treatment of Allergic Diseases.
3. Evaluation of the Desensitization Treatment of Asthma.

W. H. Kellogg, M. D., State Hygienic Laboratory, Berkeley.
1. The Approval of Laboratories by the State Department of Public Health.
2. The Prevention of Diphtheria.
3. The Service Provided by the State Laboratories for Physicians in Rural Districts.

Eugene S. Kilgore, M. D., 724 Medico-Dental Building, 490 Post Street, San Francisco.
1. Modern Conceptions of Coronary Disease.
2. Symptomatic Interrelations of Heart and Abdomen.

William S. Kiskadden, M. D., Wilshire Medical Building, 1930 Wilshire Boulevard, Los Angeles.
1. General Reconstructive and Plastic Surgery. (Lantern slides.)
2. Treatment and Prognosis of Harelip and Cleft Palate. (Lantern slides.)
3. Correction of Congenital Defects of Children. (Lantern slides.)

Fred H. Kruse, M. D., Fitzhugh Building, 384 Post Street, San Francisco.
1. Diseases of Stomach.
2. Diseases of Colon.
3. Diseases of Liver and Gall-Bladder.

Robert W. Langley, M. D., Wilshire Medical Building, 1930 Wilshire Boulevard, Los Angeles.
1. Diagnosis and Treatment of Coronary Disease.
2. X-Ray Examination of the Heart.
3. Diagnosis of Cardiac Irregularities.

Chauncey D. Leake, Ph. D., University of California Medical School, San Francisco.
1. The Development of Ideal Surgical Anesthesia.
2. Recent Advances in Pharmacology.
3. California's First Great Scientist—A Forgotten Pioneer Physician.

H. Lisser, M. D., 240 Fitzhugh Building, 384 Post Street, San Francisco.
1. The Clinical Indications for the Proper Use of Thyroid Substance. (Lantern slides.)
2. The Newer Hormones. (Lantern slides.)
3. Endocrine Disorders of the Adrenal Gland. (Lantern slides).

Frank A. Lowe, M. D., Flood Building, 870 Market Street, San Francisco.
1. Club-Feet — Congenital and Acquired. (Three reels of motion pictures.)
2. Fractures of Neck of Femur—Closed and Operative Treatment. (Motion pictures—two reels).
3. Fractured Humeri. (One reel of motion picture, and lantern slides.)

C. J. Lunsford, M. D.
(See topics under H. J. Templeton, M. D.)

Stanley H. Mentzer, M. D., 450 Sutter Street, San Francisco.
1. Bile Peritonitis.
2. Gall-Stones—Their Formation, Migration, and Treatment.
3. The Treatment of Acute Cholecystitis.

Miller, Hyman, M. D.
(See topics under George Piness, M. D.)

W. W. Newman, M. D., 450 Sutter Street, San Francisco.
1. Angina Pectoris—Treatment and Diagnosis.
2. Acute Coronary Artery Occlusion — Treatment and Diagnosis.
3. Various Cardiac Irregularities — Diagnosis and Treatment. (Moving pictures of living animal hearts.)

Gerald B. O'Connor, M. D., 723 Medico-Dental Building, 490 Post Street, San Francisco.
(See topics under George Warren Pierce, M. D.)

George Warren Pierce, M. D., and Gerald Brown O'Connor, M. D., 723 Medico-Dental Building, 490 Post Street, San Francisco.
1. The Practical Application of Reconstruction Surgery. (Moving pictures and lantern slides.)
2. The Treatment of Cleft Lip and Cleft Palate. (Moving pictures and lantern slides.)
3. The Treatment of Burns and Burn Scars. (Moving pictures and lantern slides.)

Philip H. Pierson, M. D., 1228 Medico-Dental Building, 490 Post Street, San Francisco.
1. Early Diagnosis and Treatment of Pulmonary Tuberculosis, with Special Reference to the Differential Diagnosis.

2. Pulmonary Carcinoma—Its Early Diagnosis and Treatment.
3. Foreign Bodies in the Lung—Differential Diagnosis and Treatment.

M. L. Pindell, M. D., Los Angeles County Health Department, Los Angeles.

1. Childhood Tuberculosis Roentgenologically Considered.

George Piness, M. D., and Hyman Miller, M. D., 608 Medical Office Building, 1136 West Sixth Street, Los Angeles.

1. Food Factors in Allergy.
2. Allergy in Infancy and Childhood.
3. The Treatment of Bronchial Asthma in General Practice.

D. Schuyler Pulford, M. D., 926 J Street, Sacramento.

1. Convulsive Seizures—Cause and Cure.
2. Tissue Pathology—Practical Value to the Surgeon.
3. The Cancer Problem.

J. Marion Read, M. D., 1530 Medico-Dental Building, 490 Post Street, San Francisco.

1. Pulse Irregularities and the Electrocardiogram.
2. Recent Advances in Endocrinology.
3. Blood Pressure—Clinical and Physiologic Aspects.

Alfred C. Reed, M. D., Union Square Building, 350 Post Street, San Francisco.

1. Medico-Social Backgrounds in India. (Illustrated.)
2. Amebiasis. (Lantern slides.)
3. Bacillary Dysentery. (Lantern slides.)

Frances H. Redewill, M. D., 522 Flood Building, 870 Market Street, San Francisco.

1. Renal Sympathectomy—Purpose and Details of This Operation. (Lantern slides.)
2. Latest Status on Treatment of Wassermann-Fast Cases. (Lantern slides.)
3. Ureteral Strictures—Various Types of Catheters Used and Methods of Application. (Lantern slides.)

Esther Rosencrantz, M. D., San Francisco Hospital, San Francisco.

1. Unusual Forms of Pulmonary Tuberculosis.
2. Chaulmoogra Oil in Tuberculous Skin Lesions.
3. Rollier Treatment in Tuberculosis. (Lantern slides.)

Albert H. Rowe, M. D., 242 Moss Avenue, Oakland.

1. The Challenge of Allergy in Medical Practice.
2. The Treatment of Bronchial Asthma and Hay Fever.
3. Present Problems in Diabetes Mellitus.

John J. Sampson, M. D., 1530 Medico-Dental Building, 490 Post Street, San Francisco.

1. Diagnosis and Care of Coronary Artery Occlusion and Its Sequelae.
2. Cardiac Risks in Surgery and Obstetrics.
3. Rationale of Uses and Failures in Cardiac Therapy of Digitalis, Quinidin, Barium, and Potassium.

H. Clare Shephardson, M. D., 204 Fitzhugh Building, 384 Post Street, San Francisco.

1. Treatment of Diabetes Mellitus.
2. Discussion of Diabetic Coma.
3. Complications of Diabetes Mellitus.

John Hunt Shephard, M. D., 608 Medico-Dental Building, San Jose.

1. Diseases of the Thyroid Gland.
2. Diseases of the Esophagus. (Lantern slides.)
3. Traction in the Treatment of Fractures.

Albert Soiland, M. D., 1407 South Hope Street, Los Angeles.

1. Observations of Uterine Cancer Treated by Radiation, and Results, During the Past Fifteen years.
2. Our conception of the Management of Breast Cancer.
3. Electrocoagulation and Radiation in the Treatment of Skin Malignancies.

Clifford Sweet, M. D., 242 Moss Avenue, Oakland.

1. The Child as a Patient. A discussion of the child as a patient with reference to the physical and psychic characteristics peculiar to him.
2. The Treatment of Acute Infection in Children.
3. Diagnosis, Classification, and Treatment of Acute Nephritis During Childhood.

H. J. Templeton, M. D., and C. J. Lunsford, M. D., 3115 Webster Street, Oakland.

1. Ringworm of the Feet. Based upon work done at the University of California.
2. Premalignant and Malignant Conditions of the Skin. (Lantern slides or moving pictures.)
3. The Common Dermatoses Seen in General Practice.

Howard Guyon Trimble, M. D., 707 Latham Square Building, 508 Sixteenth Street, Oakland.

1. The Preventorium Child.
2. Chest Surgery Clinic (with collaboration of surgical colleague).
3. Diagnostic Clinic on Diseases of the Chest.

C. Van Zwalenburg, M. D., 308 Citizens National Bank Building, Riverside.

1. The Cause of Appendicitis. (Moving picture.)
2. Dehydration the Cause of Heat Exhaustion.
3. Deoxygenation a Factor in Infection with Pus Bacteria.

William C. Voorsanger, M. D., 1001 Medico-Dental Building, 490 Post Street, San Francisco.

1. The Treatment of Pulmonary Tuberculosis.
2. Pulmonary Conditions Wrongly Diagnosed as Tuberculosis. (Lantern slides.)
3. Exudative Tuberculous Lesions. (Lantern slides.)

Miley B. Wesson, M. D., 939 Medico-Dental Building, 490 Post Street, San Francisco.

1. Diseases of the Prostate: Their Treatment, Medical and Surgical.
2. Diseases of the Kidney and Ureter—Symptoms and Treatment.
3. Diseases of the Bladder—Symptoms and Treatment.

Rodney A. Yoell, M. D., 1444 Medico-Dental Building, 490 Post Street, San Francisco.

1. Surgery of the Common Duct.
2. Incomplete Saline Jaundice.

* * *

Additional Educational Films

Bronchoscopy and Esophagoscopy on the Cadaver and the Living. By Samuel Iglauer, M. D., 707 Race Street, Cincinnati, Ohio. Sixteen millimeter film, 298 feet long. Rental cost is $5 per day for the first three days that the film is shown, and $3 per day thereafter.

Abbreviated Canti film. A film showing the behavior of living tissue *in vitro* and the effect of radium upon living cells. By R. Canti, M. D., Strangeways Research Hospital, Cambridge, England. This film can be secured from the American Society for the Control of Cancer. Thirty-five millimeters and sixteen millimeters, one reel requiring about ten minutes for the showing. Rental cost: This film is available for booking without cost to medical societies. Transportation charges only.

Endocarditis and Valvular Disease. Made by Dr. Emanuel Libman. May be obtained from the American Heart Association, Inc., 450 Seventh Avenue, New York, N. Y. May be used in the Spencer lens delineascope. Rental cost is $5.

Gastric Peristalsis. By Walter C. Alvarez, M. D., Mayo Clinic, Rochester, Minnesota. This film may be rented for a small amount from the Eastman Company.

Good Hospital Care. Approved by the American College of Surgeons, 40 East Erie Street, Chicago. Thirty-five millimeters, two reels, talking motion picture, safety stock. No charges for the use of this film other than carrying charges.

Harvey Film on Circulation of the Blood. May be obtained from American Medical Association, 535 North Dearborn Street, Chicago, On thirty-five millimeter stock, three reels. No expense other than express charges one way.

Intestinal Peristalsis. By Walter C. Alvarez, M. D., Mayo Clinic, Rochester, Minnesota. This film may be rented for a small amount from the Eastman Company.

Intracapsular Cataract Extraction by the Vacuum Cup Method. By E. R. Crossley, M. D., 30 North Michigan Avenue, Chicago. Rental cost $7.50, plus express charges.

Irrigation of the Maxillary Sinus by Way of the Natural Opening. By Walter H. Theobald, 307 North Michigan Avenue, Chicago. No rental fee for this film.

Living Normal and Cancer Cells. Made by Warren H. Lewis of Carnegie Institution of Washington at Baltimore, Maryland. Available in sixteen millimeters and thirty-five millimeters sizes. May be secured from the American Society for the Control of Cancer, 1250 Sixth Avenue, New York. No expense other than transportation charges.

Mechanism and Electrocardiographic Registration of the Normal Heart Beat. By Clayton J. Lundy, 1405 Peoples Gas Building, Chicago. Rental cost is $5 for each day's showing, plus transportation charges.

Mechanism of the Heart Beat and Electrocardiography. By Lewis M. Hurxthal, M. D., Lahey Clinic, 605 Commonwealth Avenue, Boston. May be secured from the Worcester Film Corporation, State Mutual Building, Worcester, Massachusetts. On sixteen millimeter and thirty-five millimeter stock. Rental cost $10 per showing, plus shipping charges.

Plastic Operations on the Nose. By Edward King, 1002 Carew Tower, Cincinnati, Ohio. No rental charge; transportation costs only.

Valves of the Heart in Action. By American Heart Association, Inc., 450 Seventh Avenue, New York, New York. Transportation costs only.

X-ray Movies of the Stomachs of Animals. By Walter C. Alvarez, M. D., Mayo Clinic, Rochester, Minnesota. May be rented for a small amount from the Eastman Company.

Young Strong-Heart. A still film which deals with the treatment and prevention of rheumatic fever in childhood. May be secured from American Heart Association, Inc., 450 Seventh Avenue, New York. Sold for $2 a copy.

More complete information in regard to these films is on file in the Association office and available to inquiring secretaries.

COMPONENT COUNTY MEDICAL SOCIETIES

CONTRA COSTA COUNTY

The first autumn meeting of the Contra Costa County Medical Society was held on Tuesday, September 12, at the Hotel Carquinez, Richmond.

The meeting was called to order at 8:25 by Dr. L. H. Fraser, president.

Two outstandingly fine papers comprised the treat of the evening. Dr. Fred Loomis of Oakland presented a very practical and illuminating talk on *"Practical Details of Obstetrics."* Dr. Hubert Rowell read a brilliant treatise on *"Fear as an Element in Disease."* Both speakers were most enthusiastically received. Discussion of Doctor Loomis's paper was participated in by Doctors Weil, Daily, Beard, and Walter Johnson.

Application for membership in the society was made by Dr. Samuel Eldridge of Crockett. He was received into membership.

Dr. I. O. Church, assistant medical director of Alameda County, representing Dr. George Reinle, president of the California Medical Association, addressed the body, proffering aid in drafting a possible program for the solution of the medical treatment for the indigent of the county.

Dr. Harry Ford reported on the efforts and progress of the Committee on Public Relations during the summer vacation months. After considerable discussion by Doctors Dozier, Beard, Leggo, U. S. Abbott, and Weil, it was agreed that the results so far obtained by the committee be approved by the society, and that several meetings with the representatives from the Public Relations Committee of the State Medical Association, with the county supervisors, and with other public-minded citizens who were directly interested be arranged in the rather near future.

Dr. William Powell, county health officer, asked for the sanction of the society in his proposed intradermal tests for tuberculosis among the school children of the county. The motion was made by Dr. U. S. Abbott, seconded, and carried.

The report of the Committee on Public Relations was accepted.

It was voted that a meeting be held with a delegation from Oakland.

Dr. William Powell was appointed by Dr. L. H. Fraser to act in conjunction with the present Committee on Public Relations, following Doctor Powell's suggestion that the committee arrange to meet the county supervisors on the day of their regular meeting in Martinez.

Dr. J. Waldo Bumgarner, upon request of Doctor Fraser, announced his proposed change of residence from Richmond to Porterville, Tulare County. Doctor Fraser expressed the regrets of the society at losing Doctor Bumgarner from the ranks of our local society, which he served as president for two years.

Doctor Fraser announced the place of the October meeting as Martinez, with the business meeting of November at Richmond.

The meeting had an attendance of thirty-three—eight guests and twenty-five members.

The meeting was adjourned by Doctor Fraser at 10:40 o'clock, after which the social hour with a buffet luncheon was a pleasant conclusion.

Clara H. Spalding, *Secretary.*

MENDOCINO COUNTY

The Mendocino County Medical Society and Auxiliary met at Fort Bragg on August 27.

Dinner was served at the Hotel Windsor at 1:30 p.m. The following members and guests were present: Doctors Babcock, Benson, Bowman, Cleland, Cushman, Howe, Hummel, Kruse, LeBaron, Pinto, Scudder, Toller, Wolfe, and Wrinkle; Mesdames Babcock, Bowman, Cleland, Cushman, Gleason, Kruse, Pinto, LeBaron, Rankin, Scudder, Toller, and Wolfe.

After the dinner the doctors met at the Redwood Coast Hospital, where Dr. Fred H. Kruse of San Francisco, as guest speaker, delivered an address on *"Gall-Bladder Disease."*

A short business meeting was held at which Dr. Harvey Pinto's application for membership was read.

Paul J. Bowman, *Secretary.*

ORANGE COUNTY

The Orange County Medical Association held its first meeting after the summer intermission on September 5 at Ketner's Café, in Santa Ana.

The first reading of the applications of Doctors Wightman and R. Harris was heard.

Doctors Remmen of Glendale and Fred Clarke of Long Beach spoke on the crying need of such an organization as the Public Health League, as did also Mr. Ben Read. Doctor Clarke extended an invitation to the members to attend the Harbor Branch medical meeting on September 29 to hear an address by the state president, Doctor Reinle.

Doctors Gobar and Maroon told briefly of their eastern clinic trips.

Doctors Harwood, Baker, McAuley and Cowles, under the capable leadership of Doctor Burlew, provided much merriment with their bedtime stories. Appropriate prizes were awarded the contestants.

Waldo S. Wehrly, *Secretary.*

SANTA BARBARA COUNTY

The regular meeting of the Santa Barbara County Medical Society was held in the [illegible] Auditorium, Cottage Hospital, on Monday evening, September 11, at eight o'clock.

The speaker of the evening was Dr. William H. Goeckerman of Los Angeles, formerly of Mayo Clinic, who gave an extremely interesting talk on *"Dermatophytosis and Dermatophytids."*

Discussion was by Doctors Pierce, Ullmann, and Means.

The society then went into executive session.

The Board of Censors reported that Doctors H. V. Findlay, William H. Wolfram, and J. H. Renner were eligible for membership, and upon balloting they were admitted into the society.

Doctor Henderson, for the Public Relations Committee, reported progress in the formation of a downtown dispensary, and advised that the city and county authorities had stated, unofficially, that they would be willing to support such an institution. Doctor Henderson asked that each member of the society do everything possible to further this program. At the conclusion of his talk it was moved, seconded, and unanimously carried, that the society endorse his program and do whatever possible for its furtherance.

William H. Eaton, *Secretary.*

⁂

SONOMA COUNTY

The September meeting of the Sonoma County Medical Society was held at Buffi's restaurant, in Healdsburg, on September 14, seventeen guests and members being in attendance. In the absence of both the president and the vice-president, Past President Frank E. Sohler presided.

Dr. H. S. Gossage of Petaluma and Doctors Vera O. Honor and Herbert C. Honor of Cotati were elected to active membership.

Routine business, consisting of reports, communications and minutes of the preceding meeting, was transacted. Attorney J. C. Tauzer of Santa Rosa, guest speaker upon the NRA, told of the causes, present condition, and the recovery of our present depression. His remarks were timely and well received.

Dr. Ira A. Wheeler, late of Cloverdale, now residing in Colfax, was granted a transfer from the Sonoma County Medical Society to the Placer County Medical Society.

W. C. Shipley, *Secretary.*

CHANGES IN MEMBERSHIP

New Members (38)

Alameda County.—Homer Alonzo Casey, John G. Saam, Grant Ellis, Charles Robert Nelson, Leonard Woods.

Fresno County.—Marvin Harrison Moore.

Los Angeles County—

Harry Wilson Boyd
Waldo F. Brinkman
Alexander C. Cameron
F. McLean Campbell
Robert L. Carroll
Tenero Danny Caruso
William F. Carver, Sr.
Roy A. Falconer
Lester Warren Fish
Paul Louis Gailmard
Donald Ezra Griggs
Ruth Hughes Hubbert
Samuel Edwin Hughes
Harper George Imler
Hyman Lischner
Samuel Andrew Scuderi
Herman Semenov
Leland Earle Stilwell
H. P. Totten
Wilbur George Rogers
Clarence J. Ryan
W. T. Zimmermann

San Diego County.—Frank C. Russell.

San Francisco County.—George S. Lachman, Ethel Righetti, Sol Maisler, Justin A. Rogers, Theodore Paul Schomaker, Albert M. Vollmer.

Santa Barbara County.—John H. Renner, William Henry Wolfram, H. V. Findlay.

Transferred (3)

Francis C. Ferry, from Orange to Los Angeles County.

Henry G. Hadley, from Los Angeles to Washington, D. C.

John Homer Woolsey, from San Francisco to Yolo-Colusa-Glenn County.

Resigned (3)

Cabot Brown, from San Francisco County.
John F. Martin, from Los Angeles County.
William C. Newton, from San Diego County.

In Memoriam

Armistead, Howell V. Died at Newman, September 12, 1933, age 74. Graduate of the University of California Medical School, Berkeley, 1885, and licensed in California the same year. Doctor Armistead was a member of the Stanislaus County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

✛

De Lucis, Cav. Andrea. Died August 21, 1933, age 82. Graduate of the University of Turin Faculty of Medicine and Surgery, Turin, Italy, 1881. Licensed in California, 1895. Doctor De Lucis was a member of the San Francisco County Medical Society, the California Medical Association, and the American Medical Association.

✛

Jorgenson, Hans Christian. Died September 9, 1933, age 57. Graduate of George Washington University Medical School, Washington, D. C., 1906. Licensed in California, 1920. Doctor Jorgenson was a member of the San Diego County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

✛

Magan, Shaen Saurin. Died August 30, 1933, age 37. Graduate of the College of Medical Evangelists, Loma Linda, 1921, and licensed in California the same year. Doctor Magan was a member of the Los Angeles County Medical Association, the California Medical Association, and a Fellow of the American Medical Association.

✛

Schurter, Maximilian Adolph. Died August 21, 1933, age 51. Graduate of Long Island College of Medicine, Brooklyn, 1912. Licensed in California in 1923. Doctor Schurter was a member of the Los Angeles County Medical Association, the California Medical Association, and the American Medical Association.

✛

Tower, Ora Isaiah. Died September 4, 1933, age 47. Graduate of the University of California Medical School, Berkeley, 1910. Licensed in California in 1914. Doctor Tower was a member of the Los Angeles County Medical Association, the California Medical Association, and the American Medical Association.

OBITUARY

David William Edelman
1869-1933

Whereas, The members of the Los Angeles County Medical Society have lost a dearly beloved friend and colleague in the death of Dr. David W. Edelman; and

WHEREAS, Doctor Edelman was an honored practitioner for more than forty years in Los Angeles, during which time he devoted a great part of his activity to the care of the deserving poor and also took an outstanding part in the religious, civic and political life of Los Angeles, in all of which activities he endeared himself to all with whom he came in contact by his high idealism and outstanding personality; now, therefore, be it

Resolved, That the members of the Board of Trustees and the Board of Councilors of the Los Angeles County Medical Association do hereby record their sorrow, and direct that a copy of this resolution be spread upon the minutes of the Association; and that a copy of same be sent to the bereaved family, together with an expression of profound sympathy.

EDWARD M. PALLETTE, M. D.
HENRY H. LISSNER, M. D.
EDMOND M. LAZARD, M. D.

THE WOMAN'S AUXILIARY TO THE CALIFORNIA MEDICAL ASSOCIATION*

A Letter from the State President†

This letter is to acquaint you with the pleasures and vicissitudes of my trip to the National Convention, in the midst of a terrific heat wave.

I found many doctors on the train, the Milwaukee convention their destination. At Omaha we were greeted with a temperature of 106 degrees, almost unbearable with the added humidity. All travelers kept insisting we were due for a change in temperature when we arrived in Chicago; we were, but it was hotter. The warmest greeting of all awaited us there. It would have required a steel knife to cut through the heat. On arrival at the Pfister Hotel, Milwaukee, I had great difficulty in getting my reservations. I demanded them on the ground of heat prostration, which I felt was threatening, and was ushered to a room, again being told the heat was breaking. The maid came in to arrange my room, saying a friend, an ambulance driver, had been carrying bodies all morning. He said if he went for another body he would come back a corpse. This was encouraging. I wondered if I would join the ranks. Before going to my room I asked for an electric fan. The clerk reiterated, "The heat is breaking, you will not need one." My windows were thrown open, and I shall never forget the breeze that wafted through that room, carrying everything before it—a life saver, a glorious return to comfort and happiness. I may add the temperature dropped 30 degrees in fifteen minutes, and about the same in Chicago. After an afternoon of rest from my complete exhaustion, I went down to the lobby, where I found many auxiliary members arriving.

At nine o'clock the next morning, we registered and attended the preconvention board meeting in the Mirror Room of the Hotel. I first paid my respects to our national president from California, whom I found deluged in her responsibilities. It is not an easy task to fulfill these duties, and I think of my own responsibilities at Riverside next April.

A very delightful luncheon was held at the College Woman's Club, where a number of the national board women and the national president spoke very interestingly. This club was formerly the home of one of the Cudahy daughters, a Mrs. Dahlman of Milwaukee. All the women's clubs in Milwaukee are beautiful old homes given up as residences and remodeled to house women's clubs.

Then began a busy time. We had little opportunity for doing anything except meetings. There were 4,500 doctors registered, and 935 women registered at auxiliary headquarters. It was interesting to meet other state presidents and to hear their reports. Some of the reports were outstanding. Mrs. Bonar White, president of the Georgia auxiliary, a charming southern woman, had her listeners in a gale of laughter before she finished enumerating the things Georgia has accomplished. You will be informed later of their many activities. I am in receipt of a letter from her in which she says, "We always look forward to California. We watch California news items because we feel proud of your accomplishments." Let us live up to that reputation. The South was particularly well represented, as was the Middle West. New York was the baby auxiliary. Oregon and Washington state presidents were present, and you know the California president also registered. The eastern states were not so well represented. I believe the southern states are best organized. They are very ambitious, being interested in a million-dollar memorial to Jane Todd Crawford, the woman on whom the first ovariotomy was performed.

Mrs. Lamson, Washington state president, made a favorable impression immediately, because of her ability and outstanding knowledge. We learned she also had literary attainments, having contributed several books to the reading public over her own signature. I am hoping she will honor us with her presence at some future California Auxiliary meeting.

The social affairs were splendidly cared for by the convention committee, headed by Mrs. L. Rock Sleyster. The national board dinner was followed by a musicale given at the Woman's Club of Wisconsin. The program offered music of different countries by musicians in native costume, all Milwaukee talent.

On Tuesday the general meeting allowed everyone to meet everyone else. The luncheon and bridge at the Wisconsin Club, a gala affair, was attended by about six hundred women. The tour of gardens and trip to convalescent homes offered much. Also the informal dance at the Wisconsin Club brought to the minds of all what had made Milwaukee famous. The souvenirs were numerous and indicative. There were many other affairs, but the most outstanding entertainment was given by the Carnation Milk people, who provided Gray Line buses for about five hundred women for conveyance to Oconomowoc for a luncheon and tour of the milk plant. Music, folk dances, and many Carnation Milk babies made their début at the lunch. Members were given presents of milk cans, which, when reversed, sounded like a band of moo cows turned loose, adding much to the amusement. On return to our respective homes, souvenirs of canned milk and recipe books followed. A thirty-mile drive each way along the beautiful lakes added to a delightful day. A vote of appreciation was extended to the Carnation Milk Company for their splendid and generous hospitality.

The "bring your husband" dinner in the Fern Room of the Hotel Pfister, with cabaret from the International House, was well attended and greatly enjoyed.

The California president is much pleased to announce she had a seat at the speakers' table at which were the outgoing and incoming presidents of the national auxiliary, as well as Dean Lewis, president-elect of the American Medical Association, and Doctor Carey, who directed the exhibit of Medical Science in Science Hall at the World's Fair in Chicago. Doctor Carey spoke splendidly of the part to be taken by the Woman's Auxiliary and of our interest, so dominantly helpful at this time. I hope to have a message from Doctor Carey for you later.

At this same luncheon we had community singing of old tunes, with words written by Mrs. William

---

* As county auxiliaries to the Woman's Auxiliary to the California Medical Association are formed, the names of their officers should be forwarded to Mrs. Thomas J. Clark, chairman of the Publicity and Publications Committee, 40 Ross Circle, Oakland. Brief reports of county auxiliary meetings will be welcomed by Mrs. Clark and must be sent to her before publication takes place in this column. For lists of state and county officers, see advertising page 6. The Council of the California Medical Association has instructed the editor to allocate one page in every issue for Woman's Auxiliary notes.

† Sent to all County Auxiliary presidents and state board members.

Myers of Savannah, Georgia. This singing struck a resonant note everywhere. It had been my pet theme to introduce community singing in the California auxiliary, until my husband asked if I intended making a camp meeting out of the auxiliary. The national has given me renewed courage. Let me know if you would like to copy the national by introducing singing in your auxiliary that we may be able to make it a successful part of our state meeting. I am sending you a copy of the songs sung at Milwaukee, from which you can have copies made.

At a beautiful home, set in the midst of colossal grounds on Lake Michigan's edge where tea was served the auxiliary, I was much intrigued on entering the house to find that all flowers, either cut or growing in pots, were the neglected and lowly geranium. I have never seen anything lovelier. They were in fancy shapes, tree shapes, fan shapes, tall slender vines, and the most exquisite colorings, grown to perfection, due to careful nurturing, potting, care and attention. Milwaukee makes most of her few short months of good weather in her development of beautiful shrubs and flowers. Her peonies are a thing of beauty.

The new national president is a splendid woman, who will give of her best and will ask the state auxiliaries to give of their best. Knowing that the national is dependent on the states, the states on the counties, she has compared us to a stage set with players, who must go on when cues are given. Your state president asks you to join Mrs. Blake's drama of Shakespeare, "All the world a stage, and we are only players from childhood to old age."

Mesdames McGlothlan, Hunsberger, Hesselgrave, and Lippincott are all very busy. They are the mothers, fathers, sisters and brothers of the auxiliary. In fact, they are

"The cream of the coffee,
The salt of the stew,
The eyes of the auxiliary
That our members see through."

Mrs. C. S. Red, author of "A Medicine Man in Texas," was a much esteemed member of the convention. Her book has brought in quite some money, which she has donated for education of medical students, and already several students have profited. These student funds are gaining in popularity, and I am hoping California may be able to join so useful and philanthropic a venture. I know there are one or two counties that have established student funds, but I am hoping it will become a leading part of our activities.

I have kept for the last the inspiring and beautiful thoughts expressed in the devotion to the memory of Mrs. Corrine Keene Freeman. There was not a paper presented or thought or action expressed without a great appreciation of her fine womanliness, of her unselfishness, and of her desire to carry her work to a higher plane. We stood in silence to honor her. Beautiful tributes were paid her. All who had not had the privilege of personal contact felt a keen loss. Her very personality pervaded the convention. Mrs. Keck of Pennsylvania was given the privilege of presenting a memoriam to Mrs. Freeman. She said, among many things, "Corrine Keene Freeman was taken from us in the midst of the administration of her trust and at the moment of her highest possible service." What finer tribute could be paid to her. In closing, Mrs. Keck quoted from Owen Meredith's "Lucile":

"Long, long may my heart
  With sweet memories be filled,
Like the vase in which roses
  Have once been distilled.
You may break, you may shatter
  The vase if you will,
But the scent of the roses
  Will cling round it still."

Mrs. Andrew Mitchell Henderson, *President.*

NEVADA STATE MEDICAL ASSOCIATION

O. HOVENDEN, McGill	President
D. A. SMITH, Mina	President-Elect
J. N. VAN METER, Las Vegas	First Vice-President
FLEET H. HARRISON, Minden	Second Vice-President
HORACE J. BROWN	Secretary

COMPONENT COUNTY MEDICAL SOCIETIES

WASHOE COUNTY

The Washoe County Medical Society held its regular monthly meeting in the library room of the State Library Building, Reno, on the evening of September 12.

A communication was read from the National Nurses' Association of New York with reference to their willingness to coöperate with President Roosevelt's progress movement of the NRA. The society decided to refer the matter to the Nevada State Nurses' Association, and so directed the secretary.

The application of Dr. Rodney Wyman of Long Island, a graduate of the medical department of Columbia University, New York City, was read and turned over to the censors for investigation and for report to the society.

Mr. Al Shipaugh of Sparks was given permission to appear before the society to speak of the relief to be extended to needy persons for the fall and winter. This relief would come through the national Reconstruction Finance Corporation board, and would automatically do away with such agencies as the Red Cross and Salvation Army. The board will be located on the upper floor of the State Building, with telephone 7181. A further purpose of the board was to give medical and surgical attention to all worthy persons of the county who have been citizens of this county for at least two years. For transients the Salvation Army would be authorized to provide a minimum amount of food and shelter. Indigent sick persons coming under this clause would be permitted to choose their own physician or surgeon, and for such service a fee such as will be determined by the aforesaid organization will be paid.

There being no further business, the society turned to the program of the evening. Dr. W. A. Shaw, for many years practicing at Elko, but for the last two years engaged in postgraduate study in children's diseases, was called upon to deliver an address on his experience in postgraduate work in the United States and abroad. Doctor Shaw began by relating some of his experiences, of one year's duration, in New York City with the New York Postgraduate School. After official affiliation with the New York Postgraduate School he went to Europe. His first contact was with a clinic and hospital of San Juan de Dios near Bilboa, Spain. He spoke most highly of the efficient orthopedic work in children done by Dr. Manuel Salaverri. The clinic was under a Catholic order of Brothers, and the clientele was composed exclusively of boys; there were no female attendants. Doctor Salaverri had been a student for several years under Lorenz, in Vienna. The clinic and hospital of Stefania Korhaz, Budapest, was next visited for three months. Doctors Elemer Hainiss and Aurel Koos were at the head of the institution, and were able to present a very large and diversified clinic in both medical and surgical diseases in children. This clinic is rather outstanding, and receives patients from all parts of Europe. It is the largest children's clinic on the Continent.

The next three months were spent in Vienna, where the work for American physicians was supervised by the American Medical Association of Vienna through the faculty of the Vienna University. Here the work was most extensive and instructive. The particular point to secure foundation for instruction was in the volume of material furnished at the clinic—medical, surgical, pathological; in fact, the whole realm of medical and surgical science was presented in such mass and with such scientific accuracy that the student could not fail to be greatly benefited by this unusual contact.

The pleasant surroundings brought out by the American Medical Association of Vienna for doctors from all parts of the world, their clubrooms, and the arrangement for participation in courses of medicine or surgery, make the newcomer perfectly at home and soon inducted into his chosen field of study.

Following further study, Doctor Shaw returned to the United States and remained two months in the Children's Hospital in Boston, and spoke most highly of the work done there. He concluded his American trip with a month at the Mayo Clinic under Doctor Helmholz, where the time passed quickly in profitable instruction.

Doctor Shaw's medical travelogue was well received by the society. The society then adjourned till the October meeting.

There were twenty-one members present.

Thomas W. Bath, *Secretary.*

C. M. A. DEPARTMENT OF PUBLIC RELATIONS*

"What Is Wrong with National Health Insurance?"†

By Sir Henry Brackenbury, LL.D., M.R.C.S.

By this address I want to be provocative of thought. My title is not a statement, but a question; and though relative brevity must almost always lead to some appearance of dogmatism, I do not want to be dogmatic but interrogatory. First, I want to recall two passages from the Memorandum of Evidence submitted on behalf of the British Medical Association to the Royal Commission on National Health Insurance.

> "The measure of success which has attended the experiment of providing medical benefit under the National Health Insurance Acts system has been sufficient to justify the profession in uniting to ensure the continuance and improvement of an insurance system."
>
> "The organization of a National Health Insurance scheme is not necessarily, or even probably, the best means of utilizing limited resources for the promotion of national health. It is more than likely that there are a number of other directions in which, severally or collectively, a corresponding expenditure would produce an even more satisfactory return."

Those statements were made more than eight years ago. There can be no doubt, however, that contradictory as some may think them, they are both regarded as true by the great majority of the medical profession today.

Bearing these statements or truths prominently in mind, I want, if I can, to administer three shocks. To some my three main points may not come as shocks at all, for there must be a number in this audience who, in the course of their meditations on the public health, have recognized the tendencies to which I shall draw attention, and who may regard my statements as mere commonplaces. There are others to whom the shock will be only mild because, without feeling their wide significance, they have been aware of the indications of danger. But to me, as soon as I realized their full implications, the conditions to which I wish to attract notice did come as a shock, and I feel sure that this must be their effect upon many others who have long been engaged in public health and insurance work, and certainly upon "the man in the street" and "the woman in the home."

QUESTION I

Adhering to the interrogatory form, I ask first: "Is it possible that the national health insurance scheme is becoming not primarily a method of securing medical advice and treatment for the insured persons, but primarily a machine for doling out to those persons small sums of money week by week or month by month?"

There has been organized for next month a luncheon in celebration of the coming of age of national health insurance. During these twenty-one years, quite apart from the cost of benefits of a medical nature, there has been spent in small pittances and on the machinery engaged in their distribution, no less than £500,000,000. If in the year 1912 a carefully selected body of persons had been told that that very large sum of money was placed at their disposal to expend by 1933 in the promotion of health and the prevention of disease in this country, over and above whatever provision was made for medical attention to the people in cases of actual illness, can it be doubted that they would have found much better, more profitable, more effective directions for its expenditure? Yet during the next twenty-one years an even larger sum of money may continue to be disbursed in similar ways.

I am casting no reflection upon approved societies and their work. On the contrary, I am filled with admiration at the success of their administration; at the smoothness, accuracy, and kindliness with which, week after week, they have directed these Treasury notes or small coins to their proper destination, in general without any large body of serious complaint; at the fine offices some of them have been able to erect and occupy; at the small armies of persons they employ; at the large sums they have placed to reserve; and at the large salaries, fully earned and thoroughly deserved I doubt not, which their chief officials are able to command.

With the exception of some of the smallest, the approved societies do their work magnificently and with extraordinary effectiveness. But are the functions they perform, whatever be their relation to social welfare in general, essential for the purpose of preventive medicine and public health? As I see it, the aspect of the matter to which I am drawing attention has been getting more prominent as the years have passed. Today, more than ever, I find public attention—the attention both of those who provide the money and of those who receive it—concentrated on the cash benefits which may be claimed rather than on the medical attention which may be secured. To a not inconsiderable degree the national health insurance system is in danger of becoming a gigantic machine for the distribution of shillings and only secondarily a beneficent medical and health service. I suggest that these two aspects of the scheme should be separated: in the financial sphere as completely as possible, in the administrative sphere as distinctly as possible. Only in this way shall we be able, on the one hand to provide, at a moderate cost, or on a compulsory insurance basis at a moderate premium, medical, surgical, maternity, and ancillary services for those who need such provision; and, on the other hand, to consider how far arrangements should be made for cash benefits, or whether, or to what extent, the money needed for such cash benefits might not be better spent on making provision for the public health on other lines or used or saved for other national purposes.

QUESTION II

Secondly, I ask, "Is the national health insurance system, even on its medical benefit side, progressively failing to cover the field for which it was intended to make provision?"

Already a considerable number of insured persons have fallen out of medical benefit by reason of unemployment. A larger number have been kept in benefit only by successive Acts of Parliament. After December 31 next, in consequence of the latest Act, a further number of persons will pass out of insurance. It is safe to say that this will be considerably larger than the 100,000 mentioned some time ago by the Ministry of Health as the result of what is now admitted to have been a not very reliable guess.

---

* An open forum for progress notes on the department's activities, and for brief discussions on medical economics. Correspondence and suggestions invited. Address Walter M. Dickie, Room 2039, Four Fifty Sutter Street, San Francisco. This column is conducted by the Director of the Department.

† Abstract of presidential address to the Section of Preventive Medicine at the Congress of the Royal Sanitary Institute at Blackpool, June, 1933.

I am not here going to discuss the problem so presented. It is part of the larger problem of necessitous areas in general. On the one hand, it is necessary to preserve the insurance principle by not giving benefits for which no corresponding premiums have been paid, while, on the other hand, it is impossible or undesirable to create a specially privileged class of noninsured persons. My point is simply this: that whereas the national health insurance scheme was intended to make provision for medical attention for all manual workers and for the less highly paid among nonmanual workers, a steadily increasing number of such workers are passing out of the scheme. Moreover, these must in large degree, or at least to an extent proportionately larger than normal, be persons for whom the provision is most required—persons with some infirmity, in impaired health, and in distressed circumstances. Must we not be concerned, then, as to whether, in fact, national health insurance is not beginning to fail of its national purpose? If this be so, it is immediately necessary either to make the provision by some other method which will be more all-embracing, or to arrange for these persons to be retained within the scheme so far as medical benefit is concerned by securing a properly calculated amount by way of premiums paid on their behalf. These people, on passing out of the insurance scheme, are thrown back either upon the charity of the medical profession or upon the arrangements made by public assistance committees. Neither will fail them; but I suggest that when, growing out of the national health insurance scheme, there is developed a general medical service for the nation it will be essential, and by no means difficult, to provide for the inclusion, by one and the same method, of those who are no longer able to make any individual contribution.

QUESTION III

My third question is, "Are we sure that the method of compulsory insurance, whatever be its merits as a means of providing medical benefit in the widest sense, is the right method for securing cash payments?"

Such experience of life as I have had, together with my reading of the experience of others in this sphere, suggests that we have made a mistake here. It suggests, further, that the mistake has been owing to an imperfect attention to the habits and psychological reactions of a significant proportion of working-class families. What proportion such families as those I am thinking of bear to the whole I do not know—it may easily be as large as one-fifth or a quarter. They consist of persons who have very little sense of property and who happily have no desire to possess or accumulate it. They are not necessarily bad or unattractive persons on that account: nor, except at times, are they, properly speaking, poor. They very likely live in what is described as a poor home, because as a rule there is not much room and very little furniture; but often, and certainly in good times, a surprising amount of money comes into the house each week. What they have they spend, sometimes on superabundant but often ill-chosen sustenance, almost universally on the more popular forms of enjoyment and entertainment. When times are bad they look for all sorts of windfalls and use all sorts of shifts and strategems to secure what is needed at the moment. There is no advantage in including such people in an insurance scheme. They are constitutionally unable to appreciate its meaning. They will resent or fail to pay their contributions. They will honestly regard such cash benefits as the scheme provides for as things to be exploited and by some means or other to be secured when need arises and other resources fail. For them the appropriate means of relieving destitution (not of providing medical attention be it noted—that comes in the other category) is not an insurance scheme but a sympathetically administered Poor Law.

For the bulk of wage-earners, for that great majority who have a reasonable sense of property and who see the need for thrift, even if some of them cannot understand the niceties of insurance, an insurance scheme to secure cash payments in appropriate circumstances is a most valuable thing. Experience shows that when it is offered advantage will be taken of it. I suggest that while there should be a national scheme for insurance for cash benefits, while there should be extensive propaganda and abundant facilities for such insurance, and within limits governmental contribution toward it, any scheme for these purposes should be on a voluntary basis. It would supply the felt need; no doubt by education and example it would gradually extend its field of recruitment; but it would avoid the difficulties and abuses which most of us have experienced as arising when the opportunity for cash payments is compulsorily extended to those whose ingrained habits and modes of thought prevent them from appreciating the conditions with which those opportunities are surrounded. I doubt, indeed, whether it will be possible for the nation to continue much longer upon the present lines.—*Supplement to the British Medical Journal* (London), Saturday, July 15, 1933.

Rats Menace Health and Wealth.—Not only do rats carry disease, but they also cause enormous economic losses. These losses consist not only in destruction of foodstuffs, but in property damage as well. It has been determined that there are more rats than people in the United States. There is at least one rat for every resident in American cities, and in the rural districts there are several rats for each resident. In grain-producing areas there is a relatively higher rat population.

It has been determined, furthermore, that a rat will consume fifty pounds of grain a year and will damage a much larger amount. One-half cent a day is a conservative estimate of the cost of the damage done by each rat. This amounts to nearly $2 a year for each rat, a total of at least $180,000,000 annually in the United States.

Among the edible products consumed by rats are the following: grain, vegetables, fruits, eggs, poultry (especially young chickens), bakery goods, grocery supplies, meats, flowers, bulbs, and countless other commodities.

Leather goods, books, clothing, fabrics, and paper are commonly destroyed by rats for use in building their nests. They are able to gnaw through lead pipe and other soft metal products. Disastrous fires are frequently caused by rats gnawing matches or wires carrying electric current.

The principal disease carried by rats is plague. They also carry paratyphoid fever, trench fever which was commonly encountered in the World War, and other less common diseases. Rats are also subject to an extremely wide variety of diseases which are considered as present in these rodents only; some of them, however, may bear a relationship to diseases found in human beings.

The following standard measures are commonly used in the destruction of rats:

1. The protection or removal of rat food.
2. The killing of rats by poison and traps.
3. The removal of material which permits a refuge for rats.
4. The remodeling of all nonratproof buildings.
5. Closure of all openings in existing ratproof buildings.
6. Erection of ratproof buildings only.—*Weekly Bulletin, California Department of Public Health.*

Where education has been entirely neglected or improperly managed, we see the worst passions ruling with uncontrolled and incessant sway. Good sense degenerates into craft, and anger rankles into malignity. Restraint, which is thought most salutary, comes too late, and the most judicious admonitions are urged in vain (S. Parr).—*Weekly Bulletin, California Department of Public Health.*

MISCELLANY

Under this department are ordinarily grouped: News; Medical Economics; Correspondence; Twenty-five Years Ago column; Department of Public Health; California Board of Medical Examiners; and other columns as occasion may warrant. Items for the News column must be furnished by the fifteenth of the preceding month. For Book Reviews, see index on the front cover, under Miscellany.

NEWS

Coming Meetings.

California Medical Association, Riverside, California, April 30 to May 2, 1934. Emma W. Pope, M. D., Secretary, 2004 Four Fifty Sutter, San Francisco.

American College of Surgeons, Chicago, Illinois, October 9-13, 1933. Franklin H. Martin, M. D., Director-General, 40 East Erie Street, Chicago.

Pacific Coast Society of Obstetrics and Gynecology, Portland, Oregon, October 19 to 20, 1933. Clarence A. De Puy, M. D., Secretary, 230 Grand Avenue, Oakland.

Interstate Postgraduate Medical Association of North America, Cleveland, October 16-20, 1933. W. B. Peck, M. D., Managing Director, 12½ East Stephenson Street, Freeport, Illinois.

Oregon State Medical Society, Portland, October 26-28, 1933, Albert W. Holman, M. D., Secretary, 364 Washington Street, Portland.

Society of Plastic and Reconstructive Surgery, New York, October 16 to 18, 1933. Gaston Labat, M. D., Secretary, 30 East Fortieth Street, New York City.

Southern California Medical Association, Los Angeles, November 3 to 4, 1933. Robert W. Langley, M. D., Secretary, 1930 Wilshire Boulevard, Los Angeles.

Medical Broadcasts.*

American Medical Association Health Talks. — The American Medical Association broadcasts on Tuesday and Thursday from 9:15 to 9:20 a. m., over Station WBBM (770 kilocycles, or 389.4 meters).

There is also a fifteen-minute talk, sponsored by the Association, on Saturday morning from 9:45 to 10 o'clock over Station WBBM.

* * *

San Francisco County Medical Society.—The San Francisco County Medical Society broadcasts every Tuesday from Station KFRC, 4 to 4:15 p. m., and over Station KJBS from 11:15 to 11:30 a. m.

* * *

Los Angeles County Medical Association.—The radio broadcast program for the Los Angeles County Medical Association for the month of October is as follows:

Tuesday, October 3—KECA, 9:30 to 9:45 a. m. and KFI, 10:15 to 10:30 a. m. Subject, Snake Bites.

Tuesday, October 10—KECA, 9:30 to 9:45 a. m. and KFI, 10:15 to 10:30 a. m. Subject, That Cold.

Tuesday, October 17—KECA, 9:30 to 9:45 a. m. and KFI, 10:15 to 10:30 a. m. Subject, Some Pertinent "Don'ts."

Tuesday, October 24—KECA, 9:30 to 9:45 a. m. and KFI, 10:15 to 10:30 a. m. Subject, What Price Health.

Tuesday, October 31—KECA, 9:30 to 9:45 a. m. and KFI, 10:15 to 10:30 a. m. Subject, Baby Learns to Walk.

Recent Advances in Bacteriology and Immunology—University of California Lectures by Dr. Charles Weiss.—A course of twelve lectures will be given in Toland Hall, University of California Hospital, Third and Parnassus Avenues, San Francisco, on Thursday evenings at eight o'clock, beginning October 5, 1933. The topics follow:

Lecture 1, October 5.—Current problems in bacteriology: dissociation, virulence, synergism, and antagonism. The nature of mixed and chronic infections.

Lecture 2, October 12.—Summary of our present knowledge of bacterial metabolism.

Lecture 3, October 19.—The filterability of micro-organisms and the problem of filterable viruses; "new" diseases caused by filterable viruses and Rickettsia.

Lecture 4, October 26.—Bacteriophage; its biology and its value in therapy.

Lecture 5, November 2. — Experimental epidemiology.

Lecture 6, November 9.—The reticulo-endothelial system and its importance in immunity and chemotherapy.

Lecture 7, November 16.—The chemistry of antigens. (A review of the recent work of Landsteiner, Zinsser, Heidelberger, and Avery.)

Lecture 8, November 23.—Bacterial allergy.

Lecture 9, December 7.—The defense mechanisms of the lungs and pleura, with special reference to the enzyme-antienzyme balance.

Lecture 10, January 18, 1934.—The immunology of tuberculosis and syphilis.

Lecture 11, January 25.—Current problems in etiology, with special reference to the causes of influenza, "rheumatism" and trachoma.

Lecture 12, February 1.—Recent work on the blood groups, with special reference to the determination of non-paternity and the study of human races.

Library Exhibit.—The new exhibit in the University of California Medical School Library is concerned with Ramazinni, the "father of industrial medicine."

Symposium on Heart Disease.—The Heart Committee of the San Francisco County Medical Society will hold a two-day postgraduate teaching course on heart disease, November 22 and 23. This meeting marks the fourth annual symposium of the Heart Committee. There is no fee in connection with the course, and all doctors who are interested are welcome to attend. If you desire a program, please notify the secretary, Dr. J. Marion Read, 490 Post Street, San Francisco, and a copy will be sent to you as soon as the programs are printed. The meetings will be held in half-day sessions at the San Francisco, University of California, and Stanford University hospitals, and at the new Department of Public health building.

State Medical Library Exhibit.—The San Francisco branch of the State Medical Library at the University of California Medical School announces that it has available a collection of over seven hundred mounted pictures of biographical and historical material relating to subjects of a medical nature. Members of the California profession desiring such illustrative medical material are invited to correspond with Miss Frances Tomlinson, State Medical Library, University of California Medical School, Third and Parnassus Avenues, San Francisco, regarding their wants.

---

* County societies giving medical broadcasts are requested to send information as soon as arranged (giving station, day, date and hour, and subject) to CALIFORNIA AND WESTERN MEDICINE, 450 Sutter Street, San Francisco, for inclusion in this column.

University of California.—Dr. J. M. D. Olmsted, professor of physiology at the University of California Medical School, Berkeley, exhibited a large series of water color paintings in Haviland Hall, recently. Most of these had been painted by Doctor Olmsted in the past three years while traveling in France and England and various parts of this country.

* * *

Dr. John Ruhrah, clinical professor of pediatrics at the Johns Hopkins Medical School, and an authority on the history of diseases of children, spoke before the faculty and students in Toland Hall, University of California Hospital, Wednesday noon, September 13. His subject was poliomyelitis.

* * *

Dr. P. K. Knoefel, Fellow of the National Research Council for the past two years in the pharmacological laboratory of the University of California Medical School, has accepted a research appointment in the department of pharmacology at Vanderbilt University Medical School. Doctor Knoefel will continue his studies on anesthesia.

American People Superior Because of Better Foods. Better feeding of the American people, whether accidental or planned, has actually produced a people of better physique within a few decades.

This view was expressed before the American Home Economics Association meeting by Prof. Agnes Fay Morgan of the University of California.

Citing achievements deriving in part, at least, from better food, Professor Morgan named: Vastly improved infant health and survival; lowered mortality and morbidity at all ages; accelerated rates of growth in children; and more comfortable as well as longer deferred and longer lasting old age.

There remain, Professor Morgan said, three pressing problems which may be of nutritional origin. These are still to be solved: The prevention and cure of malignant growths; the control of susceptibility to infectious diseases; and the prevention of the circulatory and metabolic diseases which are now one of the chief causes of death of middle-aged and elderly persons.

One Puppy Sends Sixty-Two Men to Hospital.—A dog, three months old, was recently adopted as a camp pet in one of the Civilian Conservation Corps camps located in Los Angeles County. This dog became restless and roamed about the camp, snapping at many individuals. It appears that he visited about a great deal, calling upon nearly everyone in the camp, and by the time his condition became recognized as serious he had visited sixty-two Civilian Conservation Corps men, four United States forest rangers, six civilians, and had either bitten, licked, or otherwise exposed a total of seventy-two human beings.

Upon the death of the dog, the head was sent to the Los Angeles County Health Department laboratory, where a positive examination for rabies was made. All individuals who had been exposed were placed under treatment. The Civilian Conservation Corps camp men were placed in a government hospital and the civilians were treated privately. Further investigation revealed the fact that the dog came from a litter in which the mother dog and the whole litter of pups had rabies.

This is an unusual occurrence, but it emphasizes the importance of exercising proper safeguards in the prevention of this disastrous and highly fatal disease. It is believed that the Pasteur treatment was started sufficiently early in individuals who had been exposed to the infection to insure the prevention of the development of rabies in any of them.—*Weekly Bulletin, California Department of Public Health.*

CORRESPONDENCE

Subject of following letter: Communication to the California Medical Association secretary from the dean of the University of California Medical School, regarding procedures with clinic patients.

University of California Medical School,
September 18, 1933.

Dear Doctor Pope:

The present time of economic stress bears no less heavily on medical men than on other citizens. In hope of obtaining medical care free, or at less cost, many citizens are applying to clinics for aid.

No greater ill could befall the community than to have the medical profession disintegrated and weakened by loss of financial and moral support. It is, therefore, imperative that every clinic refuse every applicant for aid who is able to pay a private doctor unless that applicant has been sent by a registered physician or is in need of emergency care.

University clinics have, as a major duty, the effective training of young medical men who are to fill the ranks of the fraternity of medicine when time depletes and weakens them. This is essential to the welfare of the medical profession and the community alike. Unless young medical men have daily contact with patients effective physicians cannot be trained. Thus, is it not, therefore, to the benefit of the profession to provide the teaching clinics with patients?

Our teaching clinicians have no desire to compete in practice with their colleagues; but they are interested and do need some patients whose study will benefit the patient and the young medical man alike. This coöperation between the clinics and the practitioners must be a two-sided matter, and in order to do its part to protect the proper interests of the practitioners of the state the social service workers of the University of California Medical Department are instructed carefully to exclude from the clinic any patient able to pay a private physician. To insure this exclusion, a full statement of the applicant's economic status is taken, together with a signed declaration from him that the statement is true. The declaration is to be signed after the patient is shown a copy of the San Francisco ordinance which makes false representation about economic status a punishable misdemeanor. The applicant is also asked to supply a letter of recommendation from two responsible citizens.

The social service worker has also to discover the name of the last physician seen by the applicant. At the next visit the applicant must bring a letter from this doctor, or if this is impractical, the social service staff communicates to the physician named by the applicant all the facts developed by social investigation and binds the clinic to be guided by that physician's advice. If the applicant is from a county other than San Francisco, the County Welfare Department is consulted. All those from San Francisco are reported daily to the Social Clearance Bureau. This bureau is maintained by the Community Chest of San Francisco in order that every clinic applicant may be known at all clinics, to the end that duplication and abuses may be avoided.

The applicant must give a signed permission to have any present or past bank account investigated. If this investigation shows that his economic state renders him an improper subject for clinic care, the physician named by the applicant is notified of the result of the investigation.

The economic status of the individual under treatment is followed and, if the income should sufficiently improve, the patient is sent back to his private physician, who then is provided with all the social and medical data developed by the clinic.

The University of California clinic administration believes that by these efforts it is proving its interest in the welfare of our colleagues in practice. If you or any members of your society can suggest other or better means of protecting the practitioner's interests, we will be happy to have them communicate with us and to put them into effect whenever possible.

(Signed) Langley Porter, M. D., *Dean.*

TWENTY-FIVE YEARS AGO*

EXCERPTS FROM OUR STATE MEDICAL JOURNAL

Vol. VI, No. 10, October, 1908

From Some Editorial Notes.

Supposed to Work.—The secretary of a county medical society is supposed to do a lot of work willingly and cheerfully, knowing that, in general, he will not receive the thanks to which he is entitled; indeed, much of his work will be entirely unappreciated by the members. He is not supposed to sit upon that which the Lord intended to be either sat upon or kicked and do nothing but enjoy what he may be pleased to regard as an empty honor. There is no empty honor in holding down a secretaryship if the holder does his work. "As the secretary, so the society," is a pretty good and a pretty truthful saying. . . .

What Are You Doing?—"What are you doing for the world?" Did you ever seriously ask yourself the question? Are you really doing anything, or are you living an absolutely selfish existence, thinking only of your own life and your own fortunes, practicing your profession for the revenue there is in it, and thinking nothing of your real duty to the rest of humanity? Your profession is an altruistic one; are you personally imbued with any of this spirit of altruism . . .

From an article on "The Bacteriology and Pathology of Plague" (With the Demonstration of Gross and Microscopic Specimens) by William B. Wherry, M. D., San Francisco, Bacteriologist to the San Francisco Board of Health.

It will be impossible to give a full account of this subject in the allotted time, so I will simply review a few facts which physicians and epidemiologists must always have in mind.

From an article on "The American Medical School and Its Entrance Requirements" by David Starr Jordan, Stanford University.

The American university of today is a compound of two divergent and more or less antagonistic elements which, in the current academic languages, we call the college and the university. The college, in theory, is a place for general culture, for training the mind, broadening the intellectual horizon, and, so far as may be, making, by tasks physical, moral and mental, a man or woman better fitted for the work of the world. The university is a place of training for one's specific duties in life. . . .

It is safe to prophecy that before many years the American university will abandon the junior college work, relegating it to the college on the one hand and to the graduate courses of the secondary schools on the other. . . .

The practice of medicine is no longer a trade but a profession. It is an art having its basis in science—and art of the greatest delicacy resting on science the most exact and the most profound. . . .

For these reasons, the old-fashioned medical school of America, the association of physicians working without pay and without endowment, dealing with students ignorant of science and literature, is passing away. Medical instruction is resuming its place in the university, where it has the benefit of university standards, university endowments, and university atmosphere. Of the many scores of medical colleges existing in America today, only those can live which become integral parts of the universities. . . .

---

* This column strives to mirror the work and aims of colleagues who bore the brunt of society work some twenty-five years ago. It is hoped that such presentation will be of interest to both old and new members.

(Continued on Page 14, Advertising Section)

BOARD OF MEDICAL EXAMINERS OF THE STATE OF CALIFORNIA*

By Charles B. Pinkham, M. D.
Secretary-Treasurer

1933 Report of Board of Medical Examiners†

Results of Board of Medical Examiners' Examination, San Francisco, July 11 to 13, 1933.—Charles B. Pinkham, M. D., secretary-treasurer of the Board of Medical Examiners of the State of California, reports results of the written examination held in San Francisco, July 11 to 13, 1933. The examination covered nine subjects, and included ninety questions for physician and surgeon applicants. An average of 75 per cent was required to pass. An allowance of 1 per cent, added to the general average, is allowed by the Medical Practice Act for each year of medical practice under a license granted elsewhere than in California, provided the applicant has not fallen below 60 per cent in more than one subject.

One hundred and twenty-one applicants took the examination.

Among the examinees were graduates of extrastate medical schools, including Austria, Canada, Italy, and Russia.

The following institutions were represented:

PASSED

College	Year of Graduation	Per Cent
College of Medical Evangelists	1933	87 5/9, 80 3/9 83 8/9, 86 6/9, 85 4/9
Cornell	1930, 78 3/9; 1932,	84 5/9, 83 7/9
Creighton	1932, 81 8/9; 1933, 82 5/9,	75 5/9, 88 1/9
Harvard	1930, 81 6/9; 1931,	86 6/9, 87 4/9
Johns Hopkins	1931	82 3/9
McGill University Faculty of Medicine, Canada	1933	81 8/9
Northwestern	1933	87 3/9, 92 5/9 77 6/9, 79 7/9, 84 6/9, 90
Royal University of Milano, Italy	1928	80 1/9
Stanford	1933	85 8/9, 82 8/9 89, 80 3/9, 78 3/9, 84 3/9, 87 8/9, 90 6/9 86 6/9, 89 1/9, 86 3/9, 83 4/9, 84, 79 8/9 88 6/9, 85 5/9, 81 3/9, 89 6/9, 83 5/9 86 2/9, 85 2/9, 82 2/9, 87 6/9, 82 6/9 87 4/9, 84 5/9, 81 2/9, 79 6/9, 87 5/9 86 5/9, 90 1/9, 88 4/9, 88 2/9, 91 8/9 83 5/9, 88, 89 4/9, 87 2/9
University of California	1932, 85 4/9; 1933,	82 6/9 86 3/9, 84 1/9, 89 5/9, 84 7/9, 88 6/9 81, 88 8/9, 86 7/9, 85 2/9, 83 1/9, 83 4/9 86 2/9, 84, 88 1/9, 85 4/9, 88 1/9, 87 1/9 88, 86 6/9, 79 1/9, 85 5/9, 90 4/9, 85 7/9 86 4/9, 86 5/9, 91 1/9, 84 2/9, 89, 83 2/9 83, 86 3/9, 88 1/9, 81 3/9, 85 1/9 86, 88 85, 85 7/9, 81 1/9
University of Cincinnati	1933	86 8/9
University of Colorado	1932	86 7/9, 80 5/9
University of Illinois	1933	80 5/9, 82 5/9 82 8/9
University of Kansas	1932	86 6/9
University of Louisville	1932	82 5/9
University of Oklahoma	1932	84
University of Oregon	1932	78, 83 1/9
University of Rochester	1932	82 6/9
University of Toronto, Canada	1931	87 6/9
University of Vienna, Austria	1932	78
Washington University	1932, 86 2/9, 87; 1933,	78 8/9

FAILED

College	Year of Graduation	Per Cent
Psychoneurological Institute, Medical College, Russia	1917	70 3/9

* * *

Results of Board of Medical Examiners' Examination, Los Angeles, July 25 to 27, 1933.—The following institutions were represented:

PASSED

College	Year of Graduation	Per Cent
Carl-Frances University, Austria	1928	75 2/9
College of Medical Evangelists	1932, 77 6/9; 1933,	86 5/9

---

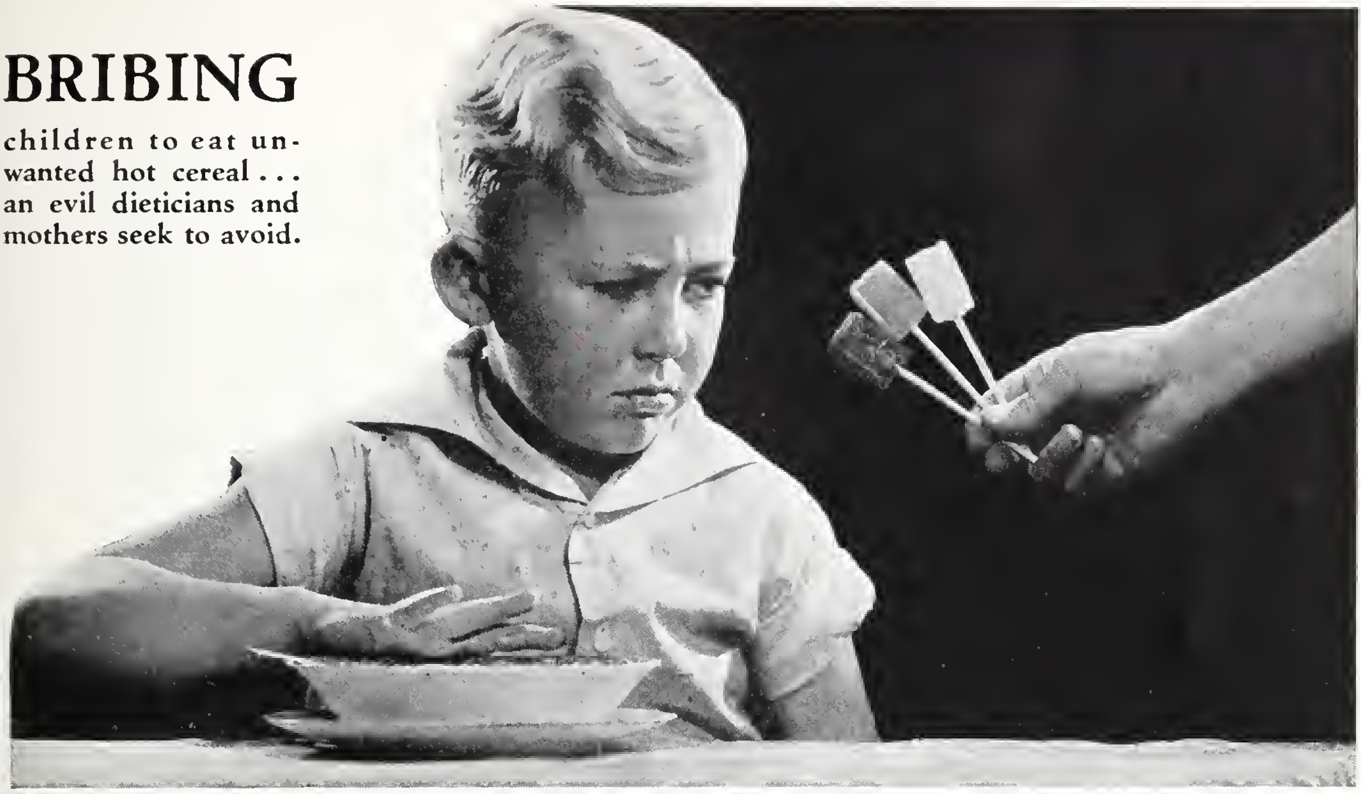
* The office addresses of the California State Board of Medical Examiners are printed in the roster on advertising page 6.

† Report of the Board of Medical Examiners of the State of California, submitted in August, 1933, through the Department of Professional and Vocational Standards, to Governor James Rolph, Jr.

(Continued on Page 17, Advertising Section)

BRIBING

children to eat unwanted hot cereal . . . an evil dieticians and mothers seek to avoid.



Tests show children prefer taste of new Wheat Germ Cereal!

IN the interest of physicians who like to know the cereal they prescribe will be actually eaten (without coaxing, bribing and forcing), we publish below the results of controlled tests conducted in two large child institutions.

84% of children preferred the taste of and chose to eat Wheat Hearts.

16% preferred the taste of and chose to eat cereal "A."

Cereal "A" is the nationally known, nationally advertised hot cereal (farina type), commonly considered most acceptable. Method used in tests and details gladly furnished.

You are familiar with Wheat Germ

SO—you will readily understand children's preference of the cereal Wheat Hearts which contains a higher percentage of wheat germ than any other cereal on the market. Wheat germ has a characteristic, rich, nutty flavor, generally liked by both adults and children.

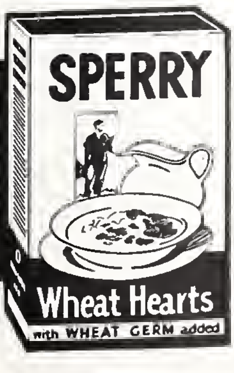
The high wheat germ content in Wheat Hearts also accounts for the *second* advantage of this cereal over other cereals. First advantage: taste preference. Second advantage: Higher Vitamin B rating. Biological assays give Wheat Hearts 81 units of Vitamin B per ounce, as against only 7 units for the usual farina-type cereal, and only 43 units per ounce for whole wheat itself and Wheat Hearts, in addition to its large wheat germ content, performs all the other nutritional functions of a hot wheat cereal with its balance of easily digested nutrients.

You will note below an offer to send you, without charge, a full sized package of this new cereal. Please understand this is no attempt to solicit testimonials you do not wish to give. On the contrary, the world's largest milling organization wishes you to have the opportunity of trying Wheat Hearts yourself. This because physicians, familiar with the facts in this advertisement, who have tried Wheat Hearts are now prescribing it.

P. S.: **Wheat Hearts are readily available at any grocery store.**

WHEAT HEARTS with WHEAT GERM added

Manufactured by division of world's largest milling organization.



SPERRY FLOUR CO.,
San Francisco, Calif.

Gentlemen:

Please send me FREE and postpaid, a full, regular sized package of your product Wheat Hearts. I enclose my professional card or business letterhead.

NAME ____________________

ADDRESS ____________________

CITY ____________________

STATE ____________________

I-10

COLLECTIONS

CREDIT RATINGS
TRACING (Lost Debtors)

N on R ecovered A ccounts

Your Bureau can help you with your "N R A." Its entire organization is at YOUR command — USE IT.

Business is improving. Send your delinquent accounts to the Bureau and let it help you take definite advantage of this improvement.

Organized and Operated FOR YOU

The Doctors Business Bureau

ESTABLISHED 1916 • • EXCLUSIVELY FOR DOCTORS

310–319 Bank of America Building
GArfield 0460
SAN FRANCISCO

Sixth Floor, Spreckels Building
TRinity 1252
LOS ANGELES

OAKLAND SALT LAKE CITY

(Continued from Front Advertising Section, Page 30)

Coronado	Dr. Ernest B. Porter
East San Diego	Under county supervision
El Cajon	Mr. Charles F. Richardson
Escondido	Dr. C. A. S. Kemper
La Mesa	Under county supervision
National City	Under county supervision
Oceanside	Under county supervision
San Diego	Dr. Alex M. Lesem
San Francisco County	Dr. J. C. Geiger, San Francisco
San Joaquin County	Dr. J. J. Sippy, Stockton
Lodi	Under county supervision
Manteca	Under county supervision
Stockton	Under county supervision
Tracy	Under county supervision
San Luis Obispo County	Dr. A. F. Gillihan, San Luis Obispo
Arroyo Grande	Under county supervision
Paso Robles	Under county supervision
San Luis Obispo	Under county supervision
San Mateo County	Dr. H. E. Morrison, San Mateo
Atherton	Mr. J. E. Farrell (acting)
Belmont	Dr. Earl Lussier
Burlingame	Dr. Matthew F. Desmond
Colma	Under county supervision
Daly City	Dr. Ferdinand Callsen
Hillsborough	Mr. C. M. Hirschey
Menlo Park	Mr. Edward H. Hart
Redwood City	Mr. Con Drathman
San Bruno	Dr. F. Holmes Smith
San Carlos	Mr. O. W. Stewart
San Mateo	Dr. W. C. McLean
South San Francisco	Dr. J. O. McMills
Santa Barbara County	Dr. R. C. Main, Santa Barbara
Lompoc	Under county supervision
Santa Barbara	Dr. W. H. Eaton
Santa Maria	Under county supervision
Santa Clara County	Dr. C. M. Burchfiel, San Jose
Alviso	Dr. J. I. Beattie, Santa Clara
Gilroy	Under county supervision
Los Gatos	Under county supervision
Mayfield	Under city of Palo Alto
Morgan Hill	Dr. R. L. Newbold
Mountain View	Under county supervision
Palo Alto	Mr. Louis Olsen
San Jose	Dr. H. C. Brown
Santa Clara	Under county supervision
Sunnyvale	Under county supervision
Willow Glen	Under county supervision
Santa Cruz County	Dr. Samuel B. Randall, Santa Cruz
Santa Cruz	Dr. J. T. Harrington
Watsonville	Dr. George P. Tolman
Shasta County	Dr. B. F. Saylor, Redding
Redding	Mr. Leslie Engram
Sierra County	Dr. Carl C. Sutton, Downieville
Downieville	Under county supervision
Loyalton	Mr. Donald M. Martin
Siskiyou County	Dr. Charles Pius, Yreka
Dorris	Dr. D. D. Todorovic
Dunsmuir	Mr. T. B. Wright
Etna	Dr. E. W. Bathurst
Fort Jones	Mr. J. H. Wise
Montague	Mr. Frank French
Mt. Shasta	Dr. Paul Wright
Yreka	Dr. Charles Pius
Solano County	Dr. W. C. Jenney, Vacaville
Benicia	Dr. P. B. Fry
Dixon	Mr. H. C. Grove
Fairfield	Dr. H. V. Clymer
Rio Vista	Mr. W. E. Godsell
Suisun	Dr. A. P. Finan
Vacaville	Mr. O. E. Alley
Vallejo	Dr. E. A. Peterson
Sonoma County	Dr. P. A. Meneray, Santa Rosa
Cloverdale	Dr. Ira A. Wheeler
Healdsburg	Dr. J. Walter Seawell
Petaluma	Dr. Henry S. Rogers
Santa Rosa	Mr. E. J. Helgren
Sebastopol	Dr. Chester Marsh
Sonoma	Mr. H. A. Fiscus
Stanislaus County	Dr. E. F. Reamer, Modesto
Ceres	Under county supervision
Modesto	Under county supervision
Newman	Dr. H. V. Armistead
Oakdale	Under county supervision
Patterson	Mr. C. Busengdal
Riverbank	Under county supervision
Turlock	Dr. C. E. Pearson
Sutter County	Dr. T. P. Peery, Yuba City
Yuba City	Dr. J. H. Barr
Tehama County	Dr. E. E. Thompson, Red Bluff
Corning	Dr. Caroline Howes
Red Bluff	Dr. F. J. Bailey
Tehama	Dr. J. H. Belyea, Los Molinos
Trinity County	Dr. W. M. Wilson, Weaverville
Tulare County	Dr. Elmo R. Zumwalt, Tulare
Dinuba	Dr. Charles S. Mitchell
Exeter	Dr. Donald C. Fowler
Lindsay	Dr. Annie L. Bond
Porterville	Dr. Phillip S. Barber
Tulare	Dr. E. R. Zumwalt
Visalia	Dr. A. W. Preston
Tuolumne County	Dr. William L. Hood, Sonora
Sonora	Dr. William L. Hood

CANYON SANATORIUM
REDWOOD CITY, CALIFORNIA

An Open Air Sanatorium for the Treatment of Tuberculosis and Diseases of the Chest.

NESTLED IN THE FOOTHILLS
For booklet giving full particulars write RALPH B. SCHEIER, M. D., *Medical Director*
San Francisco Office: 516 SUTTER STREET *Telephone* DOUGLAS 4486

Ventura County	Dr. A. A. Maulhardt, Oxnard
Fillmore	Under county supervision
Ojai	Under county supervision
Oxnard	Under county supervision
Santa Paula	Dr. C. R. Illick
Ventura	Mr. J. A. DeSerpa
Yolo County	Dr. Fred R. Fairchild, Woodland
Davis	Under county supervision
Winters	Under county supervision
Woodland	Under county supervision
Yuba County	Dr. J. H. Barr, Yuba City
Marysville	R. Hanagan, D. V. M.
Wheatland	Mr. D. C. Baun

Mead's 10 D Cod Liver Oil.—Professors Drummond and Hilditch have recently confirmed that for high vitamins A and D potency, Newfoundland cod liver oil is markedly superior to Norwegian, Scottish, and Icelandic oils.

They have also shown that vitamin A suffers considerable deterioration when stored in white glass bottles.

For years, Mead's Cod Liver Oil has been made from Newfoundland oil. For years, it has been stored in brown bottles and light-proof cartons.

Mead's 10 D Cod Liver Oil also enjoys these advantages, plus the additional value of fortification with Mead's Viosterol to a 10 D potency. This ideal agent gives your patients both vitamins A and D without dosage directions to interfere with your personal instructions. For samples write Mead Johnson & Compan, Evansville, Indiana.

Cocomalt.—The doctor who says "drink plenty of milk" can be reasonably sure of his patient's coöperation if he recommends Cocomalt. For even those who heartily dislike milk find Cocomalt a delicious and palatable drink.

Furthermore, prepared in accordance with the simple directions on the label, Cocomalt adds 70 per cent more caloric value to milk. Thus, every cup or glass a patient drinks is equal in food-energy value to almost two glasses of milk alone.

Cocomalt mixed with milk is especially valuable in pregnancy and lactation, for it is rich in vitamin D. A glass of Cocomalt, properly prepared, is equivalent in vitamin D content to two-thirds of a teaspoonful of good cod liver oil. Cocomalt is licensed by the Wisconsin University Alumni Research Foundation under the Steenbock patent. It is accepted by the Committee on Foods of the American Medical Association.

Medieval Pharmacy Exhibit.—A complete medieval pharmacy, with a wide variety of ancient apparatus and furnishings, forms a unique part of the exhibit of E. R. Squibb and Sons, manufacturing chemists, at the Century of Progress Exposition in Chicago; added to this is the professional display designed to portray the services rendered by the House of Squibb to the doctor, the pharmacist, the hospital and to the home.

The medieval apothecary, comprising more than 3,000 pieces, is regarded by antiquarians as the most valuable private collection of ancient pharmaceutical shelfware, mortars, documents and other apparatus now in existence. It was brought, intact, from Germany and at the request of Exposition officials was sent to Chicago for a first showing there in the Hall of Science.

This historic collection is composed of almost every article used in the pharmacy of the fifteenth to the eighteenth centuries, including the shelves, rare jars for the various medicaments, scales, mortars, weights, and even the portraits and imagery of those periods.

There are six general groups into which these antiquities are subdivided.

Foremost in point of importance and display is the shelfware. Much of this is artistically beautiful, originating as it does when the tin-glazed earthenware

(Continued on Next Page)

WRITE FOR LITERATURE TO YOUR NEAREST BRANCH

Slit Lamp Microscopy
has been greatly simplified by the use of the
BAUSCH & LOMB
UNIVERSAL SLIT LAMP

The Slit Lamp is no longer an exclusively research instrument, and has found a place in the well equipped ophthalmologist's office.

The wide field microscope of the Universal Slit Lamp offers 16X magnification over a large area, and the Koeppe equipment provides unsurpassed illumination regulated at will by an adjustable rheostat.

There is no vibration of the illumination system or the microscope, and quick focussing is a valuable feature of the new radial arm construction.

RIGGS OPTICAL COMPANY
Established in Sixty Western Cities
ASSOCIATED OPTICAL COMPANY
LOS ANGELES SAN DIEGO PHOENIX LONG BEACH SANTA ANA

THE SAN FRANCISCO BANK
SAVINGS COMMERCIAL TRUST
INCORPORATED FEBRUARY 10TH, 1868
One of the Oldest Banks in California, the Assets of which have never been increased by mergers or consolidations with other Banks.
MEMBER ASSOCIATED SAVINGS BANKS OF SAN FRANCISCO
526 California Street, San Francisco, Cal.
June 30th, 1933

Assets	$159,206,708.91
Capital, Reserve and Contingent Funds	$6,500,000.00

The following accounts stand on the Books at $1.00 *each, viz.:*

Bank Buildings and Lots	(Value over $2,100,000.00)
Other Real Estate	(Value over $520,000.00)
Pension Fund	(Value over $800,000.00)

MISSION BRANCH	Mission and 21st Streets
PARK-PRESIDIO BRANCH	Clement St. and 7th Ave.
HAIGHT STREET BRANCH	Haight and Belvedere Streets
WEST PORTAL BRANCH	West Portal Ave. and Ulloa St.

Interest on Deposits is Computed Monthly and Compounded Quarterly, and may be withdrawn quarterly.

(Continued from Preceding Page)

known as majolica made its first appearance. Graceful as to form, elaborate and colorful as to decoration, most of the items of ancient shelfware that have come down from the past are really museum pieces. In this group also are the glass bottles of an earlier age.

Then there are the mortars, those indispensable adjuncts of pharmacy universally and internationally recognized as one of the symbols of that calling. The oldest of these mortars is a seventh century Roman marble. There are others at various periods from the fourteenth through the eighteenth centuries.

Among the miscellaneous apparatus of the pharmacy are the scales and weights, alemics and containers of various kinds.

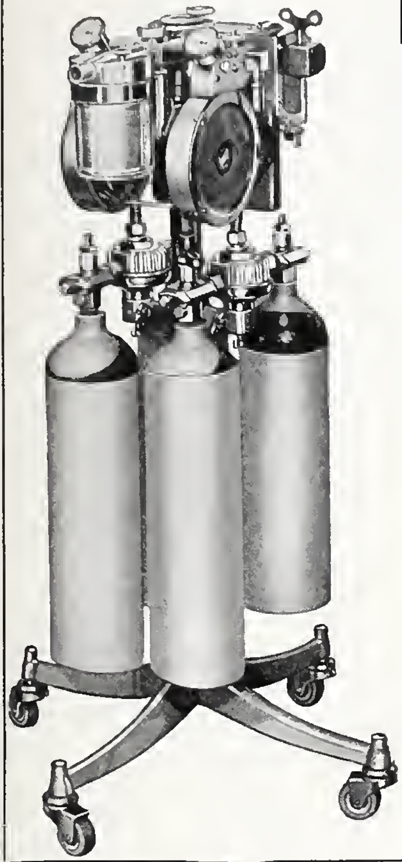
There is next the library filled with ancient parchment or beautifully tooled leather-bound books, ranging in size from the massive folio to the pocket edition of the work of some favorite and widely respected author.

In the class of curiosities are included the ancient permits to conduct a pharmacy, couched in formal language, beautifully engrossed and accompanied by the great seal of authority. One of these permits is signed by Emperor Charles VI of the Holy Roman Empire in 1728 and another by Pope Leo XII in 1820.

Also there is a group in this class which has no counterpart in the modern professional practice of either pharmacy or medicine. It is the votive shrine with its crucifix and its representation of Christ as an apothecary, for there was an element of zeal and religious fervor in the pharmacy and the medicine of the past centuries which has entirely disappeared. This was exhibited, too, in the last group, that of pictures in the form of paintings or prints. There is a valuable oil painting in the Squibb collection of "Christ the Apothecary of the Soul."

The professional exhibit is based on the theme of service to humanity and in effect is a demonstration of quality in Squibb products, grounded in seventy-five years of adherence to the principle upon which the house of Squibb was founded, namely, that "the

THE ANESTHETIST MUST HAVE
FAULTLESS EQUIPMENT



PERIODICALLY, we call to inspect your anesthetic equipment. This service is offered whether you use our equipment or not. It is based on the realization that *the anesthetist must have faultless equipment.* Day and night emergency service is maintained constantly for servicing and supplying apparatus for purchase or rental.

We distribute several lines of equipment, all made to the highest known standards. And, while none of it is made in our own plant, it is subjected to our own rigid inspection. The same policy of critical analyses of mechanism prevails with the same relentless vigilance as with our own medical gases. It is a fixed policy.

Certified Gases
NITROUS OXIDE · ETHYLENE · CARBON DIOXIDE
CARBOGEN · MEDICAL OXYGEN

CERTIFIED
LABORATORY PRODUCTS, LTD.
1379 Folsom St., San Francisco **1503 Gardena Ave., Glendale, Calif.**
WEST COAST HOSPITAL SUPPLY COMPANY
Pacific Northwest Distributors
25 E. Sixth Street, Portland, Ore. **408 Battery Street, Seattle, Wash.**

priceless ingredient of every product is the honor and integrity of him who makes it."

In addition, there are three self-operating displays depicting typical chemical reactions. One of these shows titration, which is a process used in control and in research work, and which lends itself readily to spectacular demonstrations due to the color changes of indicators used in determining the end point.

The process of crystallization, typical of many Squibb manufacturing processes, also is shown, demonstrating the formation and growth of crystals.

The third process is precipitation, another typical chemical manufacturing operation, which shows the formation of an insoluble product when two solutions are poured together. These three demonstrations were devised and installed by Theodore Edison, son of Thomas Alva Edison.

The exhibit also features a collection of historical objects comprised chiefly of apparatus used by Dr. Edward R. Squibb, founder of the house. The manufacturing plant and laboratories in Brooklyn are reproduced in a large diorama with changing light effects showing the buildings in both daylight and at night.

Outside the exhibit proper, in sectional window settings, are seven striking murals done by William S. Matthews, New York artist. These depict such subjects as pharmacy, chemistry and research.

Rocky Mountain Spotted Fever Cases Reported.—Thirteen cases of Rocky Mountain spotted fever have been reported in California this year up to July 1 of the current year, two of which cases have proved fatal. The source of three of these cases was in Nevada, while the remaining ten cases were contracted in Modoc and Lassen counties.

This disease, which is endemic in the northwestern states—particularly in Montana, Idaho, eastern Oregon, northwestern California and western Nevada—is a

(Continued on Next Page)

Hydro-Electro and Physiotherapy Building

Alexander Sanitarium
Incorporated
Belmont, California
Telephone Belmont 40 P. O. Box 27

Hydro-Electro and Physiotherapy Treatments. Specializing in Recuperative and Nervous Cases. Homelike Atmosphere. Absolutely Modern in every respect. Inspection invited.

22 miles from San Francisco—Situated in the beautiful foothills of Belmont, on Half Moon Bay Boulevard. The grounds consist of seven acres studded with live oaks and blooming shrubbery.

Just the place for the overworked, nervous and convalescent. Number of patients limited. Physician in attendance.

Address ALEXANDER SANITARIUM
Phone Belmont 40 Box 27, Belmont, Calif.

St. Luke's Hospital
SAN FRANCISCO
A Limited General Hospital of 200 Beds

BENJAMIN H. DIBBLEE, *President*
I. C. KNOWLTON, *Secretary*

Executive Committee
ALANSON WEEKS, M. D., *Chairman*
GEORGE D. LYMAN, M.D.
HAROLD P. HILL, M. D.
W. G. MOORE, M. D.

HOWARD H. JOHNSON, M. D.
Secretary and Medical Director

Fully approved by the American College of Surgeons and the American Medical Association for Resident and Intern Training.

Limited Facilities for Part-Pay Treatment

SEVEN YEARS' USE
has demonstrated the value of
THE SURGICAL SOLUTION
of
MERCUROCHROME,
H. W. & D.
in
Preoperative Skin Disinfection

●

This preparation contains 2% Mercurochrome in aqueous-alcohol-acetone solution and has the advantages that:

Application is not painful.
It dries quickly.
The color is due to Mercurochrome and shows how thoroughly this antiseptic agent has been applied.
Stock solutions do not deteriorate.

●

Now available in 4, 8 and 16 oz. bottles, and in special bulk package for hospitals.

Literature on request

HYNSON, WESTCOTT & DUNNING, Inc.
Baltimore, Maryland

SUN PORCH

For the care and treatment of Nervous and Mental Diseases, Selected Alcoholic and Drug Addiction Cases

Patients referred to us by attending physicians remain in their care, except under their expressed wish to the contrary. Out of town doctors are furnished with daily reports of patient.

THE PARK SANITARIUM
1500 PAGE STREET
San Francisco California
Phone MArket 0331

(Continued from Preceding Page)

serious and highly fatal disease. It is spread by certain ticks. A vaccine suitable for administration to individuals who may be exposed to ticks is now available and may be obtained through the laboratory of the United States Public Health Service at Hamilton, Montana. Physicians may secure this vaccine by communicating with the laboratory.—*Weekly Bulletin, California Department of Public Health.*

Birth Control.—The following bulletin has been sent out by the National Committee on Federal Legislation for Birth Control, 17 West Sixteenth Street, New York City:

A Few Important Reasons for Amending Existing Birth Control Laws.—Federal laws passed in 1873 class birth control with obscenity. This stigma should be removed from subject affecting public health. . . . Federal laws conflict with state laws. . . . The medical organizations most familiar with this subject have gone on record in favor of amending these laws: The American Gynecological Society (1925); Section on Obstetrics, Gynecology, and Abdominal Surgery of the American Medical Association; the Medical Women's National Association; National Committee on Maternal Health, Inc.

The present federal birth control laws:

1. Section 211 of the United States Penal Code . . . Prohibits sending or receiving by or from the United States mails information or supplies pertaining to the prevention of conception. There are no exemptions.

2. Section 245 of the United States Penal Code. . . . Also prohibits sending or receiving, by or from, an express company or other common carrier information or supplies pertaining to the prevention of conception. There are no exemptions.

3. Section 311 and 312 affect the territories and districts of the United States, and are even more rigid in their prohibition, as they forbid even the possession

SOILAND CLINIC

Drs. Soiland, Costolow and Meland

1407 South Hope Street, Los Angeles, Calif.

Telephone PRospect 1418

HOURS: 9:00 to 4:00

A medical group organized and equipped for the study, diagnosis and treatment of neoplastic and allied disease.

ALBERT SOILAND, M D.
WM. E. COSTOLOW, M. D.
ORVILLE N. MELAND, M. D.
A. L. LINDBERG, M. D., ***Pathologist***
A. H. WARNER, Ph. D., ***Physicist***

of any article intended for the prevention of conception. There are no exemptions.

4. Section 305 of the Tariff Act prohibits the importation of articles pertaining to the prevention of conception. There are no exemptions.

Violations of these laws are subject to $2,000 or $5,000 fine or imprisonment for five years, or both.

Senate Bill S-4436 (Hatfield, West Virginia), proposes to amend the above sections by adding the following paragraph to each section:

"The provisions of this section shall not be construed to apply to any book or information relating to the prevention of conception, or article, instrument, substance, drug, medicine, or thing designed, adapted, or intended for the prevention of conception, for use (1) by any physician legally licensed to practice medicine in any state, territory, or the District of Columbia, or by his direction or prescription; (2) by any medical college legally chartered under the laws of any state, territory, or the District of Columbia; (3) by any druggist in his legitimate prescription business; or (4) by any hospital or clinic licensed in any state, territory, or the District of Columbia."

I hope that overemphasis upon normal dieting is a passing fad and that our people, especially our younger women, will learn the importance of having well-nourished bodies and brains. For that they must eat well-balanced diets of sufficient quantities of the various constituents, among which none is more important than bread (Surgeon General H. S. Cumming).—*Weekly Bulletin, California Department of Public Health.*

A sick man is not a good farmer nor is he a good judge of hogs, horses, or cattle. He must be free from handicaps caused by physical suffering if his mental faculties are to function soundly. (Florida Health Notes.) — *Weekly Bulletin, California Department of Public Health.*

"... It's a Good Way to Stay Young"

It is generally agreed among the medical profession that a definite relationship exists between premature old age and intestinal putrefaction. Also generally accepted are these conclusions in research:

1—**The possibility of implanting bacteria of known physiological properties in place of those which are ordinarily present in the intestine, and**
2—**The establishment, in the intestine, of a nonputrefactive flora by oral administration of L. Acidophilus Milk.**

Many California physicians prescribing L. Acidophilus Milk to overcome disturbances resulting from unfavorable bacterial flora in the intestinal tract, are prescribing Golden State Brand Acidophilus Milk and Colon Culture. They are most reliable products* produced in this Company's own research laboratories under the direction of a qualified bacteriologist.

Your investigation and consideration of Golden State Brand Acidophilus Milk is solicited. Telephone the Golden State plant for service.

GOLDEN STATE BRAND DAIRY PRODUCTS

Golden State
COMPANY, LTD.
Plants Throughout California

Research Laboratories located at
425 Battery Street, San Francisco
1120 Towne Avenue, Los Angeles

*** In its advertising to the public, Golden State Company, Ltd., does not offer its Acidophilus Milk in any sense as a cure-all, and in every instance the Company advises that treatment be carried on under the direction of a physician.**

NRA MEMBER U.S. WE DO OUR PART

Colfax School for the Tuberculous

Colfax, California

(Altitude 2400 feet)

This institution is for the treatment of medical tuberculosis and of selected cases of extrapulmonary (so-called surgical) tuberculosis.

The Colfax School for the Tuberculous consists of five Hospital Units with beds for patients who come unattended and a Housekeeping Cottage Colony for patients and their families.

The Colfax School for the Tuberculous offers the following advantages:

1. Patients are given individual care by experienced tuberculosis specialists. The patient is treated according to his individual needs.
2. Patients are taught how to secure an arrest of their disease, how to remain well when once the disease is arrested, and how to prevent the spread of the disease.
3. Patients have the advantage of modern laboratory aids to diagnosis and of all modern therapeutic agencies.
4. The climate of Colfax enables the patient to take the cure without discomfort twelve months in the year. We believe climate is secondary to medical supervision and rest, but the fact remains that it is easier to "cure" under good climatic conditions than where these climatic conditions are absent.
5. Colfax is accessible. It is on the main line of the Ogden Route of the Southern Pacific R. R. and has excellent train service. It can be reached by paved highway, being on the Victory Highway, with paved roads all the way to Colfax.

For further information address

ROBERT A. PEERS, M. D., *Medical Director*
Colfax, California

NEXT ANNUAL SESSIONS
California Medical Association, Riverside, April 30–May 3, 1934
American Medical Association, Cleveland, Ohio, June 11–15, 1934

RECEIVED
NOV 16 1933
OFFICE OF THE DEAN
UNIVERSITY OF CALIFORNIA
MEDICAL SCHOOL

CALIFORNIA AND WESTERN MEDICINE

Owned and Published Monthly by the California Medical Association
FOUR FIFTY SUTTER, ROOM 2004, SAN FRANCISCO
ACCREDITED REPRESENTATIVE OF THE CALIFORNIA AND NEVADA MEDICAL ASSOCIATIONS

VOLUME XXXIX
NUMBER 5
NOVEMBER · 1933
50 CENTS A COPY
$5.00 A YEAR

CONTENTS AND SUBJECT INDEX

SPECIAL ARTICLES:

Care of the Indigent and Semi-Indigent Sick. By George G. Reinle, Oakland....289
Spinal Anesthesia. By Louis H. Maxson, Seattle, Washington....292
Physical Therapy in California. (A Special Committee Report)....297
Reflections Concerning Neuropsychiatry. By Charles Lewis Allen, Los Angeles..298
Hypersensitivity of the Skin to Light. By Laurence R. Taussig, San Francisco....301
Tuberculous Cavities—Their Significance, Prognosis and Treatment. By Carl R. Howson, Los Angeles....302
Discussion by Robert A. Peers, Colfax; F. M. Pottenger, Monrovia; Philip H. Pierson, San Francisco.
Pregnancy as a Complication of Heart Disease. By Ina M. Richter and John F. Rickard, San Francisco....306
Discussion by Saxton T. Pope, Jr., San Francisco; Alice F. Maxwell, San Francisco; William J. Kerr, San Francisco.
Clinical Tetanus. Part I. By Hyman I. Vener, A. G. Bower, and J. E. McKillop, Los Angeles....309
Commitment Laws in California and Elsewhere. By Glenn Myers, Los Angeles....313
Discussion by Herman Adler, Berkeley; Clifford W. Mack, Livermore; Charles Lewis Allen, Los Angeles.
Asthma in Childhood. By Hyman Miller and George Piness, Los Angeles....319
Discussion by Francis Scott Smyth, San Francisco; Edward Matzger, San Francisco; William W. Belford, San Diego.
Diphtheria Immunization. By Lillian Kositza, Los Angeles....322
Discussion by H. E. Thelander, San Francisco; George M. Stevens, Los Angeles; A. J. Scott, Jr., Los Angeles.

LURE OF MEDICAL HISTORY:

Fifty Years of Progress in the Prevention of Disease. Part I. By J. C. Geiger, San Francisco....327

CLINICAL NOTES AND CASE REPORTS:

Instrumental Perforation of the Rectum. By Kenneth E. Smiley, Los Angeles....329
An Unusual Congenital Urogenital Anomaly. By D. E. F. Easton, San Francisco....329
Saccular Dilatation of Saphenous Vein. By Don D. Weaver, Oakland....331
A New Vaginal Retractor. By Henry L. White, Red Bluff....332
Unusual Mastoiditis. By R. C. McLaughlin, Los Angeles....333
Opium Narcosis. By Thomas W. Bath, Reno, Nevada....334

BEDSIDE MEDICINE:

Early Diagnosis of Pregnancy....335
Discussion by Samuel Hanson, Stockton; Edward N. Ewer, Oakland; Adolph W. Kosky, Santa Monica; Gertrude Moore, Oakland.

EDITORIALS:

Federal Emergency Relief Administration—California Medical Association Coöperation....340
County Health and Institutions Commissions—Santa Clara's Example....340
Superior Court Decides Against Pay Patients in County Hospitals....342
Alameda County Plan....343
California Medical Association Extension Lectures....343

EDITORIAL COMMENT:

Flatulent Diarrhea Allegedly Due to Milk Pasteurization. By W. H. Manwaring, Palo Alto....343
The Nature of Anesthetic Shock and the Value of Premedication. By P. K. Knoefel, San Francisco....344
The Mechanism of Traumatic Shock. By Hyman Miller, Los Angeles....344

STATE MEDICAL ASSOCIATIONS:

CALIFORNIA MEDICAL ASSOCIATION....346
- Official Notices....346
- Component County Medical Societies....346
- C. M. A. Department of Public Relations....350
- Woman's Auxiliary to the C. M. A.....351

NEVADA STATE MEDICAL ASSOCIATION....352

MISCELLANY:

News....355
Correspondence....356
Federal Emergency Relief Plan....358
An Important County Hospital Court Decision....359
Twenty-Five Years Ago....360
Board of Medical Examiners of the State of California....360
California Medical Association Directories....Adv. pages 2, 4, 6
Book Reviews....Adv. page 11

ADVERTISEMENTS—INDEX:

....Adv. page 8

"Entered as second-class matter at the post office at San Francisco, California, under the Act of March 3, 1879." Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized August 10, 1918.

GREENS' EYE HOSPITAL

. . . for Consultation, Diagnosis, and Treatment of the Eye

BUSH AT
OCTAVIA
STREET
San Francisco
Telephone
WEst 4300

THE HOSPITAL

As an aid in the study and diagnosis of eye conditions, Greens' Eye Hospital maintains a fully equipped

Ear, Nose, and Throat Department

This department is conducted on the same basis as the eye clinic and is open to all patients for the treatment of Ear, Nose, and Throat.

●

EMERGENCY EYE SERVICE

A twenty-four hour emergency eye service including Sundays and holidays is now available with an Ophthalmologist on duty.

Staff

OPHTHALMOLOGY
Aaron S. Green, M. D.
Louis D. Green, M. D.
Martin I. Green, M. D.
Einar V. Blak, M. D.
Vincent V. Suglian, M. D.

OTOLARYNGOLOGY
Lafayette P. Monson, M. D.

Address Communications to Superintendent

BUSH

Patronize Your Home Firm

BECAUSE WE ARE PROGRESSIVE

OF INTEREST TO THE MEDICAL PROFESSION

We are located in our new two-story Los Angeles home, with a four-car concrete garage built in for the convenience of our patrons. Our building was designed by our Mr. Glenn Smith, with offices and display room on the main floor. The second floor is devoted to equipment, sales room, shipping, and service, including a well organized staff especially skilled by many years of experience in X-ray and Physiotherapy Arts.

Exclusive Distributors for

KELLEY KOETT MFG. CO. BURDICK CORPORATION
CAMBRIDGE INSTRUMENT COMPANY (Cardiographs)

THE PERSONNEL

GLENN E. SMITH, *Manager*

MRS. GERTRUDE CARNEY	*Office Manager*	HARVEY BATES	*Maintenance Manager*
R. G. STODDARD	*Sales Department*	R. J. McKENNA	*In Charge of Shop*
WILLIAM JEPSON	*Sales Department*	EARL MASON	*Service Department*
H. W. MILLS	*Sales Department*	GEORGE SEYMOUR	*Service Department*
GEORGE GORGURA	*Shipping Department*	RUSSELL BAILEY	*Service Department*

BUSH ELECTRIC CORPORATION

334 Sutter Street
SAN FRANCISCO, CALIF.
EXbrook 5090

2016 Wilshire Boulevard
LOS ANGELES, CALIF.
EXposition 1189

BUSH

Officers of the California Medical Association

General Officers

President—George G. Reinle, 204 Dalziel Building, 532 Fifteenth Street, Oakland.

President-Elect—Clarence G. Toland, 902 Wilshire Medical Building, 1930 Wilshire Boulevard, Los Angeles.

Speaker of House of Delegates—Edward M. Pallette, 502 Wilshire Medical Building, 1930 Wilshire Boulevard, Los Angeles.

Vice-Speaker of House of Delegates—John H. Graves, 977 Valencia Street, San Francisco.

Chairman of Council—T. Henshaw Kelly, 830 Medico-Dental Building, 490 Post Street, San Francisco.

Vice-Chairman, Morton R. Gibbons, Union Square Building, 350 Post Street, San Francisco.

Chairman of Executive Committee—Karl L. Schaupp, 530 Medico-Dental Building, 490 Post Street, San Francisco.

Chairman of the Committee on Public Relations—Charles A. Dukes, 601 Wakefield Building, 426 Seventeenth Street, Oakland.

Secretary-Treasurer—Emma W. Pope, Four Fifty Sutter Street, Room 2004, San Francisco.

Editor—George H. Kress, 945 Roosevelt Building, 727 West Seventh Street, Los Angeles.

General Counsel—Hartley F. Peart, Room 1800, 111 Sutter Street, San Francisco.

Associate General Counsel—Hubert T. Morrow, Van Nuys Building, 210 West Seventh Street, Los Angeles

Councilors

District Councilors

First District—Imperial, Orange, Riverside, and San Diego Counties, W. W. Roblee (1935), 202 Mission Inn Rotonda, Riverside.

Second District—Los Angeles County, Carl R. Howson (1936), 711 Merritt Building, 307 West Eighth Street, Los Angeles.

Third District—Kern, San Bernardino, San Luis Obispo, Santa Barbara and Ventura Counties, Henry J. Ullmann (1934), 1520 Chapala Street, Santa Barbara.

Fourth District—Calaveras, Fresno, Inyo, Kings, Madera, Mariposa, Merced, Mono, San Joaquin, Stanislaus, Tulare and Tuolumne Counties, Fred R. DeLappe (1935), 218 Beaty Building, 1024 J Street, Modesto.

Fifth District—Monterey, San Benito, San Mateo, Santa Clara and Santa Cruz Counties, Alfred L. Phillips (1936), Farmers and Merchants Bank Building, Santa Cruz.

Sixth District—San Francisco County, Karl L. Schaupp (1934), 530 Medico-Dental Building, 490 Post Street, San Francisco.

Seventh District—Alameda and Contra Costa Counties, Oliver D. Hamlin (1935), Federal Realty Building, Oakland.

Eighth District—Alpine, Amador, Butte, Colusa, El Dorado, Glenn, Lassen, Modoc, Nevada, Placer, Plumas, Sacramento, Shasta, Sierra, Sutter, Tehama, Yolo, and Yuba Counties, C. E. Schoff (1936), 322 Medico-Dental Building, 1127 Eleventh Street, Sacramento.

Ninth District—Del Norte, Humboldt, Lake, Marin, Mendocino, Napa, Siskiyou, Solano, Sonoma and Trinity Counties, Henry S. Rogers (1934), Petaluma.

Councilors-at-Large

George G. Hunter (1935), 910 Pacific Mutual Building, 523 West Sixth Street, Los Angeles.

C. O. Tanner (1936), 3255 Fourth Street, San Diego.

William H. Kiger (1934), 911 Wilshire Medical Building, 1930 Wilshire Boulevard, Los Angeles.

Morton R. Gibbons (1935), Union Square Building, 350 Post Street, San Francisco.

T. Henshaw Kelly (1936), 830 Medico-Dental Building, 490 Post Street, San Francisco.

Junius B. Harris (1934), Medico-Dental Building, 1127 Eleventh Street, Sacramento.

Standing Committees

Executive Committee

The President, the President-elect, the Speaker of the House of Delegates, the Chairman of the Council, the Chairman of the Auditing Committee, the Chairman of the Committee on Public Relations, the Secretary-Treasurer and the Editor. (Karl L. Schaupp, chairman; Emma W. Pope, secretary.)

Auditing Committee

O. D. Hamlin	Oakland	1933
Morton R. Gibbons	San Francisco	1933
Karl L. Schaupp (Chairman)	San Francisco	1933

Committee on Associated Societies and Technical Groups

R. Manning Clarke (Chairman)	Los Angeles	1934
Clifford Sweet	Oakland	1935
William H. Geistweit	San Diego	1936

Committee on Extension Lectures

Robert T. Legge (Chairman)	Berkeley	1934
James F. Churchill	San Diego	1935
J. Homer Woolsey	San Francisco	1936

Secretary ex officio

Committee on Health and Public Instruction

Langley Porter	San Francisco	1934
Fred B. Clarke (Chairman)	Long Beach	1935
W. R. P. Clark	San Francisco	1936

Committee on History and Obituaries

George D. Lyman	San Francisco	1934
Charles D. Ball (Chairman)	Santa Ana	1935
J. Marion Read	San Francisco	1936

Secretary ex officio
Editor ex officio

Committee on Hospitals, Dispensaries and Clinics

Karl L. Schaupp	San Francisco	1934
John C. Ruddock	Los Angeles	1935
Daniel Crosby (Chairman)	Oakland	1936

Committee on Industrial Practice

Harry E. Zaiser	Orange	1934
Morton R. Gibbons (Chairman)	San Francisco	1935
Mott H. Arnold	San Diego	1936

Committee on Medical Defense

Henry Snure, Sr. (Chairman)	Los Angeles	1934
George G. Reinle	Oakland	1935
Fred R. De Lappe	Modesto	1936

Committee on Medical Economics

Willard Stone	Pasadena	1934
John H. Graves (Chairman)	San Francisco	1935
William R. Molony, Sr.	Los Angeles	1936

Committee on Medical Education and Medical Institutions

H. A. L. Ryfkogel	San Francisco	1934
George Dock (Chairman)	Pasadena	1935
George G. Hunter	Los Angeles	1936

Committee on Membership and Organization

LeRoy Brooks	San Francisco	1934
Harry H. Wilson (Chairman)	Los Angeles	1935
Dewey R. Powell	Stockton	1936

Secretary ex officio

Committee on Publications

Percy T. Magan (Chairman)	Los Angeles	1934
Ruggles A. Cushman	Talmage	1935
Frederick F. Gundrum	Sacramento	1936

Secretary ex officio
Editor ex officio

Committee on Public Policy and Legislation

E. T. Remmen	Glendale	1934
Junius B. Harris (Chairman)	Sacramento	1935
Fred R. De Lappe	Modesto	1936

President ex officio
President-elect ex officio

Committee on Scientific Work

Lemuel P. Adams	Oakland	1934
J. Homer Woolsey	Woodland	1935
F. M. Pottenger	Monrovia	1936

H. O. Koefod, Secretary of Section on General Medicine, ex officio
Edwin M. Taylor, Secretary of Section on General Surgery, ex officio
Emma W. Pope (Chairman), ex officio

Committee on Arrangements (Annual Session 1934)

William W. Roblee (Chairman)	Riverside	1934
Hervey S. Faris	Riverside	1934
G. Wayland Coon	Riverside	1934
Bon O. Adams	Riverside	1934
Arthur W. Walker	Riverside	1934

Committee on Public Relations

The Committee on Public Relations consists of the chairmen of the following standing committees and of certain general officers of the Association, all serving ex officio. The chairman of the committee is Dr. Charles A. Dukes, the secretary is Dr. Emma W. Pope. The director of the Department of Public Relations is Dr. Walter M. Dickie.

Fred B. Clarke	Chair., Com. on Health and Public Instruction
Daniel Crosby	Chair., Com. on Hospitals, Dispensaries, Clinics
Morton R. Gibbons	Chair., Com. on Industrial Practice
Harry H. Wilson	Chair., Com. on Membership and Organization
John H. Graves	Chair., Com. on Medical Economics
Junius B. Harris	Chair., Com. on Public Policy and Legislation
Charles A. Dukes	Chair., Cancer Commission
George G. Reinle	President of the California Medical Association
Clarence G. Toland	President-elect
Emma W. Pope	Secretary-Treasurer

Communications for the Public Relations Department should be addressed to the Director, Dr. Walter M. Dickie, Room 2039, 450 Sutter Street, San Francisco.

Cancer Commission

Charles A. Dukes (Chairman)	Oakland	1934
Lyell C. Kinney (Vice-Chairman)	San Diego	1934
Alson R. Kilgore (Secretary)	San Francisco	1934
Orville Meland (Sec'y for Southern Section)	Los Angeles	1935
A. Herman Zeiler	Los Angeles	1935
Gertrude Moore	Oakland	1935
Harold Brunn	San Francisco	1936
Henry J. Ullmann	Santa Barbara	1936
Clarence G. Toland	Los Angeles	1936

Communications for the Cancer Commission should be addressed to the Secretary, A. R. Kilgore, M. D., Room 2039, 450 Sutter Street, San Francisco.

(Roster lists continued on advertising page 4)

SPECIAL MOTORCYCLE SERVICE
HOURS: Week Days, 8 A.M. to 9 P.M. . . . . Sundays, 9-1, 6-8
Special attention given all telephone prescriptions. Four stores will furnish special motorcycle service delivery to any part of the city at any hour of the day or evening.

Broemmel's Prescription Pharmacies
ESTABLISHED 1868
SERUMS ✓ VACCINES ✓ ANTITOXINS

Third Floor Medico-Dental Bldg.
Post and Mason Streets
Telephones: GArfield 0265-0266

California and Steiner Streets
Telephones: WEst 0558-0559
Fourth Floor, 450 Sutter
Telephones: GArfield 4486-4487

Second Floor, Fitzhugh Bldg.
Post and Powell Streets
Telephones: GArfield 4417-4418-4419-4420-4421-4422

LAS ENCINAS - - - PASADENA, CALIF.
A SANITARIUM FOR THE TREATMENT OF GENERAL AND NERVOUS DISEASES
Board of Directors: GEORGE DOCK, M. D., *President;* W. JARVIS BARLOW, M. D.; STEPHEN SMITH, M. D.; CHARLES W. THOMPSON, M. D.; GEORGE HUNTER, M. D.
Address: STEPHEN SMITH, M.D., F.A.C.P., or CHARLES W. THOMPSON, M.D., F.A.C.P., Medical Directors
LAS ENCINAS, PASADENA, CALIFORNIA

Borden's Evaporated Milk.—Borden's Evaporated Milk, which is now enjoying such a great vogue in infant feeding, is manufactured only from pure, full cream milk from healthy, inspected cattle in the richest dairy regions of America.

"This product," says a scientific pamphlet, which is accepted by the Committee on Foods of the American Medical Association, "precisely fulfills the exacting requirements of safety, digestibility and assimilability, uniformity, stability, and nutrient quality demanded by the physician for the infant-feeding formula."

That this is so has been demonstrated by many clinical tests on large groups of babies, as well as by the experience of physicians with innumerable individual cases. Of particular interest is a recent study by Jeans and Stearns (*American Journal of Diseases of Children,* 46:69, July, 1933), showing that the retentions of nitrogen, calcium, and phosphorus by infants on evaporated milk are approximately the same as those of infants fed on undiluted acidified fresh milk.

Evaporated milk, says Tobey in his new book, "Milk, the Indispensable Food" (Olsen, 1933), is the most digestible form of milk. This author also points out that the important vitamins A, D, E, and G are not appreciably affected when milk is evaporated, although there may be a slight loss of vitamin B and destruction of vitamin C. Since these vitamins are easily replaced in the diet by the supplementary foods routinely given to all babies, such as orange juice, this slight loss is of no practical significance and is more than compensated for by the many other advantages of a product such as Borden's Evaporated Milk.

A sound mind in a sound body is a short but full description of a happy state in this world; he that has these two has little more to wish for; and he that wants either of them will be but little the better for anything else (John Locke, 1690).—*Weekly Bulletin, California Department of Public Health.*

Dewar & Hare Electric Co.
Manufacturers and Distributors
X-Ray and Physiotherapy Equipment
and
Aurora X-Ray Corporation Products
X-Ray Apparatus ✓ Quartz Ultra Violet Lamps
Infra Red Lamps ✓ Accessories
"Thermotax" Diathermy ✓ "Electrotax" Sine Wave
386 SEVENTEENTH STREET, *near Franklin St.*
Telephone GLencourt 9273 Oakland, California

A San Francisco Organization
Shumate Drug Company
DISPENSING CHEMISTS
Catering to the Medical Profession
Since 1890

Officers of Scientific Sections of California Medical Association

Anesthesiology

Chairman, John Miller Wilson, 605 Professional Building, Pasadena.
Secretary, Ethel Righetti, 319 Walnut Street, San Francisco.

Dermatology and Syphilology

Chairman, Louis F. X. Wilhelm, 410 California Medical Building, 1401 South Hope Street, Los Angeles.
Vice-Chairman, C. E. Schoff, 322 Medico-Dental Building, 1127 Eleventh Street, Sacramento.
Secretary, Philip K. Allen, 314 Medico-Dental Building, 233 A Street, San Diego.

Eye, Ear, Nose and Throat

Chairman, J. Roy Jones, 2138 Third Avenue, Sacramento.
Vice-Chairman, Harold A. Fletcher, 1440 Medico-Dental Building, 490 Post Street, San Francisco.
Secretary, Samuel A. Durr, 1304 Medico-Dental Building, 233 A Street, San Diego.

General Medicine

Chairman, Fred H. Kruse, 916 Fitzhugh Building, 384 Post Street, San Francisco.
Secretary, Hilmar O. Koefod, 1421 State Street, Santa Barbara.

General Surgery

Chairman, Joseph K. Swindt, 546 Investment Building, Pomona.
Secretary, Edwin M. Taylor, 230 Grand Avenue, Oakland.
Assistant Secretary, William P. Kroger, 902 Wilshire Medical Building, 1930 Wilshire Boulevard, Los Angeles.

Industrial Medicine and Surgery

Chairman, John J. Loutzenheiser, Union Square Building, 350 Post Street, San Francisco.
Secretary, J. Minton Meherin, 507 Union Square Building, 350 Post Street, San Francisco.

Neuropsychiatry

Chairman, Clifford W. Mack, Livermore Sanitarium, Livermore.
Vice-Chairman, Helen Hopkins, 925 Pacific Mutual Building, 523 W. Sixth Street, Los Angeles.
Secretary, H. Douglas Eaton, 811 Medical Office Building, 1136 West Sixth Street, Los Angeles.

Obstetrics and Gynecology

Chairman, Alice F. Maxwell, University of California Hospital, Fourth and Parnassus Avenues, San Francisco.
Vice-Chairman, Emil F. Krahulik, 1021 Taft Building, 1680 N. Vine Street, Hollywood.
Secretary, H. A. Stephenson, 521 Medico-Dental Building, 490 Post Street, San Francisco.

Pathology and Bacteriology

Chairman, George D. Maner, 657 South Westlake Avenue, Los Angeles.
Secretary, Emil Bogen, Olive View Sanitarium, Olive View.
Assistant Secretary, Zera E. Bolin, 450 Sutter Street, San Francisco.

Pediatrics

Chairman, Francis S. Smyth, University of California Hospital, Fourth and Parnassus Avenues, San Francisco.
Secretary, Henry E. Stafford, 242 Moss Avenue, Oakland.
Assistant Secretary, Sam J. McClendon, 2001 Fourth Street, San Diego.

Radiology

Chairman, Robert S. Stone, University of California Hospital, Fourth and Parnassus Avenues, San Francisco.
Secretary, Kenneth S. Davis, St. Vincent's Hospital, 2131 Ocean View Boulevard, Los Angeles.

Urology

Chairman, Lewis Michelson, 434 Medico-Dental Building, 490 Post Street, San Francisco.
Secretary, George F. Schenck, 308 Wilshire Medical Building, 1930 Wilshire Boulevard, Los Angeles.

Officers of County Medical Associations

Alameda County Medical Association

2404 Broadway, Oakland
President, Dexter N. Richards, 400 29th St., Oakland.
Secretary, Gertrude Moore, 2404 Broadway, Oakland.

Butte County Medical Society

President, Dan H. Moulton, Box 520, Chico.
Secretary, J. O. Chiapella, Chiapella Building, Chico.

Contra Costa County Medical Society

President, L. H. Fraser, American Trust Bldg., Richmond.
Secretary, Clara H. Spalding, 331 Eighth Street, Richmond.

Fresno County Medical Society

President, Elmer J. Schmidt, 612 T. W. Patterson Building, Fresno.
Secretary, Neil J. Dau, 1111 Fulton St., Fresno.

Humboldt County Medical Society

President, Lane Falk, 507 F Street, Eureka.
Secretary, L. A. Wing, Eureka.

Imperial County Medical Society

President, John L. Parker, Brawley.
Secretary, George C. Holleran, Brawley.

Kern County Medical Society

President, Perryman F. Page, Box 426, Taft.
Secretary, Seymour Strongin, San Joaquin Hospital, Bakersfield.

Kings County Medical Society

President, C. G. Newbecker, Hanford.
Secretary, Benjamin H. Pratt, First National Bank Building, Lemoore.

Lassen-Plumas County Medical Society

President, Bert J. Lasswell, Quincy.
Secretary, C. I. Burnett, Knoch Building, Susanville.

Los Angeles County Medical Association

1925 Wilshire Boulevard
President, Charles T. Sturgeon, 1930 Wilshire Boulevard, Los Angeles.
Secretary, Harry H. Wilson, 1925 Wilshire Boulevard, Los Angeles.

Marin County Medical Society

President, John H. Kuser, Cheda Building, San Rafael.
Secretary, Carl W. Clark, Albert Building, San Rafael.

Mendocino County Medical Society

President, R. A. Babcock, Willits.
Secretary, Paul J. Bowman, Fort Bragg.

Merced County Medical Society

President, B. E. McDowell, Bank of Italy Building, Merced.
Secretary, Fred O. Lien, Shaffer Building, Merced.

Monterey County Medical Society

President, R. M. Fortier, 2 McDougall Building, Salinas.
Secretary, John A. Merrill, 308 Spazier Building, Monterey.

Napa County Medical Society

President, C. A. Johnson, Gordon Building, Napa.
Secretary, M. M. Booth, 1379 Main Street, St. Helena.

Orange County Medical Society

President, William S. Wallace, 207 W. Chapman Street, Orange.
Secretary, Waldo S. Wehrly, 620 N. Main Street, Santa Ana.

Placer County Medical Society

President, L. B. Barnes, Newcastle.
Secretary, R. A. Peers, Colfax.

Riverside County Medical Society

President, Hervey S. Farris, 3616 Main Street, Riverside.
Secretary, T. A. Card, Glenwood Block, Riverside.

Sacramento Society for Medical Improvement

President, George A. Briggs, 409 Farmers and Mechanics Bank Bldg., Sacramento.
Secretary, Frank W. Lee, 510 Physicians Building, 1027 Tenth Street, Sacramento.

San Benito County Medical Society

President, L. C. Hull, Hollister.
Secretary, L. E. Smith, Hollister.

San Bernardino County Medical Society

President, Fred B. Moor, Loma Linda.
Secretary, E. J. Eytinge, 47 East Vine Street, Redlands.

San Diego County Medical Society

Fourteenth Floor, Medico-Dental Building, 233 A Street, San Diego
President, Clair L. Stealy, 2001 Fourth St., San Diego.
Secretary, William H. Geistweit, Jr., 810 Medico-Dental Building, 233 A Street, San Diego.

San Francisco County Medical Society

2180 Washington Street, San Francisco
President, Karl L. Schaupp, 530 Medico-Dental Bldg., 490 Post St., San Francisco.
Secretary, Mary Jones-Mentzer, 2180 Washington St., San Francisco.

San Joaquin County Medical Society

President, J. F. Doughty, 231 W. 11th St., Tracy.
Secretary, C. A. Broaddus, 907 Medico-Dental Building, 242 North Sutter Street, Stockton.

San Luis Obispo County Medical Society

President, W. D. Butler, 1114 Chorro Street, San Luis Obispo.
Secretary, Allen F. Gillihan, San Luis Obispo.

San Mateo County Medical Society

President, Benjamin H. Page, 231 Second Avenue, San Mateo.
Secretary, H. H. Ray, 23 Second Avenue, San Mateo.

(Roster lists continued on advertising page 6)

Santa Barbara County Medical Society

President, M. J. Geyman, 1520 Chapala Street, Santa Barbara.
Secretary, William H. Eaton, Health Department, Santa Barbara.

Santa Clara County Medical Society

President, George L. Barry, 700 Medico-Dental Building, San Jose.
Secretary, E. O. G. Schmitt, 608 Medico-Dental Building, San Jose.

Santa Cruz County Medical Society

President, O. C. Marshall, New Register Building, Watsonville.
Secretary, Samuel B. Randall, Farmers and Merchants Natl. Bank Bldg.. Santa Cruz.

Shasta County Medical Society

President, Earnest Dozier, Masonic Building, Redding.
Secretary, F. H. Olberg. Craddock Building, Redding.

Siskiyou County Medical Society

President, W. E. Hart, Yreka.
Secretary, Joseph Langer, Hilt.

Solano County Medical Society

President, Philip B. Fry, Benicia.
Secretary, John W. Green, 427 Sacramento Street, Vallejo.

Sonoma County Medical Society

President, Mark L. Lewis, 41 Main Street, Petaluma.
Secretary, W. C. Shipley, 206 Rosenberg Building, Santa Rosa.

Stanislaus County Medical Society

President, Donald L. Robertson, 1003 12th Street, Modesto.
Secretary, J. A. Porter, 209 Beaty Bldg., 1024 J St., Modesto.

Tehama County Medical Society

President, F. L. Doane, Red Bluff.
Secretary, F. J. Bailey, Red Bluff.

Tulare County Medical Society

President, Frank Kohn, County Hospital, Tulare.
Secretary, Karl F. Weiss, Security First National Bank Building, Visalia.

Ventura County Medical Society

President, F. Royal Hendricks, 620 E. Main St., Ventura.
Secretary, Wm. Felberbaum, 134 N. 10th St., Santa Paula.

Yolo-Colusa-Glenn County Medical Society

President, Oscar C. Railsback, Woodland Clinic, Woodland.
Secretary, G. W. Desrosier, Colusa.

Yuba-Sutter County Medical Society

President, T. E. Larner, I. O. O. F. Building, Marysville.
Secretary, Fred W. Didier, Wheatland.

Vitamins A, B, D *and* G

GUARANTEED

The Committee on Foods of the American Medical Association has taken a commendable stand in the promotion of honest products and of honest advertising, by ruling that "Vitamin claims shall stipulate the specific vitamin or vitamins present." The Maltine Company concurs in this ruling.

Maltine With Cod Liver Oil is a biologically standardized product with a guaranteed potency of vitamins A, B, D and G. When administered with orange or tomato juice, vitamin C is supplied. This combination enables physicians to prescribe five important vitamins as a group offering a reliable and beneficial method of building up bodily resistance and bringing about healthy, normal conditions.

First introduced in 1875, Maltine With Cod Liver Oil has maintained a position of leadership both in quality and in volume. The product is constantly under laboratory supervision to maintain its high quality and to assure the profession that the vitamin A, B, D and G content is absolutely guaranteed. Copy of biological and vitamin report will be sent to physicians on request. Manufactured by The Maltine Company, *Est.* 1875, 30 Vesey Street, New York, N. Y.

Maltine
WITH COD LIVER OIL
CONTAINS VITAMINS A, B, D and G IN NATURAL FORM
THE MALTINE COMPANY
ACCEPTED
AMERICAN MEDICAL ASSN.
Council on Pharmacy and Chemistry

THE ORIGINAL

Maltine

WITH COD LIVER OIL

Introduced in 1875

Member NRA
We do our part

Certifoods—sieved vegetables of known and guaranteed vitamin potency. Prepared by an exclusive process which conserves maximum vitamin values, proteins, calories and mineral salts—particularly iron and phosphorus. Prepared by Certifoods, Inc., subsidiary of The Maltine Company.

Woman's Auxiliary to the California Medical Association

State Auxiliary Officers

President, Mrs. Andrew Mitchell Henderson, 1600 M Street, Sacramento.
President-Elect, Mrs. Philip Schuyler Doane, 855 Oak Knoll Circle, Pasadena.
First Vice-President, Mrs. Paul A. Quaintance, 809 South Orange Drive, Los Angeles.
Second Vice-President, Mrs. Thomas Clark, 40 Ross Circle, Oakland.
Recording Secretary, Mrs. Ruggles A. Cushman, Talmage.
Corresponding Secretary, Mrs. Charles E. Von Geldern, 1325 Fortieth Street, Sacramento.
Treasurer, Mrs. F. N. Scatena, 1400 Forty-first Street, Sacramento.

Officers of County Auxiliaries

Alameda County — President, Mrs. Charles Dukes, 211 The Uplands, Oakland.

Contra Costa County—President, Mrs. U. S. Abbott, 5490 Barrett Avenue, Richmond.
Los Angeles County — President, Mrs. A. Bennett Cooke, Pasadena.
Mendocino County—Mrs. R. A. Cushman, Talmage.

Napa County—President, Mrs. W. L. Blodget, Calistoga.

Orange County—Mrs. C. S. O'Toole, Anaheim.

Riverside County — Mrs. A. W. Walker, Riverside.

Sacramento County—President, Mrs. Frederick N. Scatena, Sacramento.

San Bernardino County—President, Mrs. C. G. Hilliard, Redlands.

San Diego County—President, Mrs. Charles E. Howard, San Diego.

San Joaquin County—President, Mrs. P. B. Gallegos, Stockton.

Santa Barbara County—President, Mrs. R.T. Atsatt, Santa Barbara.

San Luis Obispo County—Mrs. Deon A. Crew, 846 Higuera Street, San Luis Obispo.

Sonoma County—President, Mrs. Henry S. Rogers, Petaluma.

Delegates and Alternates to the American Medical Association

DELEGATES		ALTERNATES
C. A. Dukes, Oakland	(1934)	Edward N. Ewer, Oakland
Carl R. Howson, Los Angeles	(1934)	Edward M. Pallette, Los Angeles
Junius B. Harris, Sacramento	(1934)	John Hunt Shepard, San Jose
William R. Molony, Sr., Los Angeles	(1934)	John C. Ruddock, Los Angeles
Elbridge Best, San Francisco	(1934-1935)	Robert S. Stone, San Francisco
Lyell C. Kinney, San Diego	(1934-1935)	Harry H. Wilson, Los Angeles
Fred B. Clarke, Long Beach	(1934-1935)	A. J. Scott, Los Angeles

Miscellaneous California Medical Organizations

California State Department of Public Health

San Francisco—State Office Building, McAllister and Larkin Streets. UNderhill 8700.
Sacramento—State Office Building, Tenth and L Streets. CApital 2800.
Los Angeles — State Office Building, 217 West First Street. MAdison 1281.
President, John H. Graves, San Francisco.
Director, Giles S. Porter, Los Angeles.

Board of Medical Examiners of the State of California

San Francisco, Rm. 512, 450 McAllister St.
Los Angeles, 812 Associated Realty Building
510 West Sixth Street

Sacramento, 420 State Office Building
President, William R. Molony, Sr., Los Angeles.
Secretary, C .B. Pinkham. Room 512, 450 McAllister Street, San Francisco.

Southern California Medical Association

President, Bon O. Adams, Riverside.
Secretary, Robert W. Langley, 1002 Wilshire Medical Building, 1930 Wilshire Boulevard, Los Angeles.

California Northern District Medical Society

President, D. Schuyler Pulford, California State Life Building, Sacramento.
Secretary, Edward S. Babcock, 820 Medico-Dental Building, 1127 Eleventh Street, Sacramento.

Pacific Roentgen Club

Chairman, Lowell S. Goin, 1930 Wilshire Boulevard, Los Angeles.

Secretary, L. H. Garland, 450 Sutter Street, San Francisco.

Better Health Foundation

President, Reginald Knight Smith, 490 Post Street, San Francisco.
Chairman, Executive Committee, Walter B. Coffey, 65 Market Street, San Francisco.
Treasurer, John Gallwey, 1195 Bush Street, San Francisco.
Secretary, Celestine J. Sullivan, 490 Post Street, San Francisco.

Nevada State Medical Association

D. A. SMITH, Mina	President
E. E. HAMER, Carson City	President-elect
J. N. VAN METER, Las Vegas	First Vice-President
W. H. FROLICH, East Ely	Second Vice-President
HORACE J. BROWN, Reno	Secretary-Treasurer
HORACE J. BROWN, Reno	Delegate
FLEET H. HARRISON, Minden	Alternate

Hospitals and Sanatoriums

The Institutions here listed have announcements in this issue of California and Western Medicine. For Index, see advertising page 8.

ALEXANDER SANITARIUM
Nervous and Mild Mental Diseases
Belmont, California

CANYON SANATORIUM
For the Treatment of Tuberculosis
Redwood City, California

COLFAX SCHOOL FOR THE TUBERCULOUS
For the Treatment of Tuberculosis
Colfax, California

COMPTON SANATORIUM AND LAS CAMPANAS HOSPITAL, COMPTON
Neuropsychiatric and General

DANTE SANATORIUM
Limited General Hospital
Van Ness and Broadway, San Francisco

FRANKLIN HOSPITAL
Limited General Hospital
Fourteenth and Noe Streets, San Francisco

FRENCH HOSPITAL
General Hospital
Geary at Fifth Avenue, San Francisco

GREENS' EYE HOSPITAL
Consultation, Diagnosis and Treatment of Diseases of the Eye
Bush and Octavia Streets, San Francisco

THE GREER HOME, Inc.
Convalescent Home
6000 Fulton Street, San Francisco

LAS ENCINAS SANITARIUM
Nervous and General Diseases
Las Encinas, Pasadena, California

LIVERMORE SANITARIUM
Nervous and General Diseases
Livermore, California

OAKS SANITARIUM
For Treatment of Tuberculosis
Los Gatos, California

POTTENGER SANATORIUM AND CLINIC
For the Treatment of Tuberculosis
Monrovia, California

PARK SANITARIUM
Mental and Nervous, Alcoholic and Drug Addictions
1500 Page Street, San Francisco, California

SAINT FRANCIS HOSPITAL
Limited General Hospital
Bush and Hyde Streets, San Francisco

ST. LUKE'S HOSPITAL
Limited General Hospital
27th and Valencia Streets, San Francisco

ST. MARY'S HOSPITAL
General Hospital
2200 Hayes Street, San Francisco

TWIN PINES
Internal Medicine and Neuropsychiatric Cases
Belmont, California

NRA
MEMBER
U.S.
WE DO OUR PART

THIS LARGE SIZE AMPUL

is for your convenience

Procaine Hydrochloride Crystals Squibb is a highly purified spinal anesthetic made in accordance with U. S. P. requirements. But more than that — when you specify "Squibb" you are getting a product that is convenient to use.

Procaine Hydrochloride Crystals Squibb is marketed in a large-size ampul. It saves time — equipment — and lessens the danger of contaminating the material. The spinal fluid doesn't have to be transferred from vessel to vessel. It may be withdrawn directly into the ampul and from the ampul to the syringe used for injection.

The growing interest in this form of anesthesia has led to the preparation of an informative booklet giving indications and instructions for the use of Procaine Hydrochloride Crystals Squibb for spinal anesthesia. We shall be pleased to send you a copy on receipt of the coupon below.

Procaine Hydrochloride Crystals Squibb is marketed in ampuls of 50, 100, 120, 150 and 200 mgms., 10 ampuls to the package. Directions for use are enclosed with every package.

**PROCAINE
HYDROCHLORIDE
CRYSTALS
SQUIBB**

E. R. Squibb & Sons,
3211 Squibb Building, New York City

Gentlemen: Please send me your booklet on Spinal Anesthesia ☐. I would also like booklets on Obstetrical Analgesia ☐. Open Ether Anesthesia ☐.

Name ....

Street ....

City.................... *State*..................

ALPHABETICAL LIST OF ADVERTISERS

Members of the California Medical Association can aid their Journal and the firms who advertise therein, by coöperation as indicated in the footnote on this page

PAGE

Alex Martin Manufacturing Co. Ltd., 29
Alexander Sanitarium 37
Aloe Co., A. S. 11
American Red Cross 31
Approved Clinical Laboratories 12

Barry Co., The James H. 27
Borden Co., The 19
Broemmel's Prescription Pharmacies 3
Bush Electric Corporation 1

California Lima Bean Growers' Association 26
Calso Water Co. 30
Camp & Co., S. H. 18
Canyon Sanitarium 35
Certified Laboratory Products 37
Chesterfield Cigarettes 3 Cover
Ciba Company, Inc. 26
Classified Advertisements 10
Colfax School for the Tuberculous 40
Compton Sanitarium and Las Campanas Hospital 30
Cutter Laboratory 4 Cover

Dante Sanatorium 14
Dewar & Hare Electric Co. 3
Diederich Optical Co., Inc. 28
Doctors' Business Bureau 34

PAGE

Dry Milk Co., The 15

Four Fifty Sutter 30
Franklin Hospital 22
French Hospital 28

Gallia Laboratories, Inc. 31
Golden State Co., Ltd. 39
Greens' Eye Hospital 2 Cover
Greer Home 9
Guth, C. Rodolph, Clinical Laboratories 10

Hospitals and Sanatoriums 6
Hynson, Westcott & Dunning, Inc. 38

La Loma Feliz 9
Las Encinas Sanitarium 3
Lilly & Co., Eli 32
Livermore Sanitarium 22

Maltine Company, The 5
Mead Johnson & Co. 20
Mulford Biological Laboratories 13

New York Polyclinic Medical School and Hospital 9

Oaks Sanitarium, The 25
Officers of the California Medical Association 2-4

PAGE

Officers of Miscellaneous Medical Associations 6

Parke, Davis & Co. 16
Park Sanitarium 38
Petrolagar Laboratories, Inc. 33
Postgraduate Instruction 9
Pottenger Sanatorium 17

Ray, Frederick, Collection Specialist 4 Cover
Riggs Optical Company 36

Saint Francis Hospital 9
San Francisco Bank, The 36
Sharp & Dohme 13
Shumate's Prescription Pharmacies 3
Soiland, Albert (Radiological Clinic) 39
Squibb & Sons, E. R. 7
Stacey, J. W., Medical Books 11
Stuart Oxygen Co. 23
Saint Luke's Hospital 38
Saint Mary's Hospital 21

Travers & Hennig, Inc. 9
Tuberculosis Christmas Seals 24
Tulane University of Louisiana Graduate School of Medicine 9
Twin Pines 11

Walters Surgical Company 11

ON CO-OPERATION WITH ADVERTISERS

California and Western Medicine, the Journal of our Association, in its present form, is made possible in part because of the generous coöperation of firms who believe that its pages can successfully carry a message concerning their products to a desirable group of present and future patrons.

The five thousand and more readers of California and Western Medicine often have occasion to purchase articles advertised in this publication.

Other things being equal, it would seem that reciprocal courtesy and coöperation should lead our members to give preference to those firms who place announcements in our publication.

Coöperation might go even farther than that. When ordering goods from our advertisers, mention California and Western Medicine. By the observance of this rule, a distinct service will be given your Association, its Journal and our advertisers.

A SERVICE AGENCY—FOR READERS

The Journal of the American Medical Association and the A. M. A. Coöperative Medical Advertising Bureau of Chicago maintain a Service Department to answer inquiries from you about pharmaceuticals, surgical instruments and other manufactured products, such as soaps, clothing, automobiles, etc., which you may need in your home, office, sanitarium or hospital.

We invite and urge you to use this Service. It is absolutely *free* to every member of the California and Nevada Associations. The Coöperative Bureau is equipped with catalogues and price lists of manufacturers, and can supply you information by return mail.

Perhaps you want a certain kind of instrument which is not advertised in California and Western Medicine, and do not know where to secure it; or do not know where to obtain some automobile supplies you need. This A. M. A. Service Bureau will give you the information. Whenever possible, the goods will be advertised in our pages; but if they are not, we urge you to write direct to the Coöperative Medical Advertising Bureau, 535 N. Dearborn Street, Chicago, Illinois. California and Western Medicine and the A. M. A. Service Bureau desire to serve *you*.

The New York Polyclinic

MEDICAL SCHOOL AND HOSPITAL

(Organized 1881)

(The Pioneer Post-Graduate Medical Institution in America)

We announce

POST-GRADUATE INSTRUCTION

for the

GENERAL PRACTITIONER

For information address MEDICAL EXECUTIVE OFFICER: 345 W. 50th St., New York City

---

SAINT FRANCIS HOSPITAL

AND

SCHOOL OF NURSING

A General Hospital With Accommodations for Three Hundred Patients

DIRECTORS

JOHN GALLWEY, M. D.
W. B. COFFEY, M. D.
THOS. E. SHUMATE, M. D.
C. R. BRICCA, M. D.
W. W. WYMORE, M. D.
JOHN H. GRAVES, M. D.
Superintendent, V. W. OLNEY
J. H. O'CONNOR, M. D.
R. K. SMITH, M. D.
H. E. MANWARING
W. H. LINFORTH

Address Communications

SAINT FRANCIS HOSPITAL

Bush and Hyde Streets
Telephone PROSPECT 7600
San Francisco

La Loma Feliz

(HAPPY HILLSIDE)

Residential School for children handicapped by heart disease, asthma and kindred conditions.

Offers consistent medical attention and regular schooling. No tuberculous or mentally retarded children. Situated on a ranch in the foothills near Santa Barbara. Dry equable climate by actual weather bureau observations.

P. O. Box 585
Telephone No. 22349

INA M. RICHTER, M. D.
Director

Mission Canyon Road
Santa Barbara, California

TRAVERS AND HENNIG, INC.

DEPENDABLE

PHYSICIANS' AND HOSPITAL SUPPLIES

429 Sutter Street ✓ San Francisco ✓ Telephone SUtter 8596

Mail Orders Given Prompt Attention :: Complete Stock on Hand

ABDOMINAL SUPPORTERS, ELASTIC STOCKINGS, TRUSSES, ETC.

EXPERT FITTERS IN ATTENDANCE

The Tulane University of Louisiana

Graduate School of Medicine

Approved by the Council on Medical Education of the A. M. A.

POSTGRADUATE instruction offered in all branches of medicine. Courses leading to a higher degree have also been instituted.

For bulletin furnishing detailed information, apply to the . . . .

DEAN

Graduate School of Medicine

1430 Tulane Avenue
New Orleans, La.

The GREER HOME, *specializing in*

RECUPERATIVE AND NERVOUS CASES

AN INSTITUTION OF 25 BEDS

Our staff includes a resident physician and competent corps of registered nurses.

Attractive location and recreational surroundings with absence of hospital atmosphere. Inspection invited. Only referred cases of qualified physicians accepted.

The GREER HOME, Inc.

Corner 36th Avenue and Fulton Street
SAN FRANCISCO, CALIFORNIA
Telephone EVERGREEN 9645

CLASSIFIED ADVERTISEMENTS

Rates for these insertions are $4 for fifty words or less; additional words 5 cents each.

COACHING FOR STATE BOARDS—MEDICAL AND dental. Arthur H. White, M. D., Suite 1005, Flood Building, San Francisco.

FURNISHED SUITE OF ROOMS, 450 SUTTER STREET, San Francisco, available certain hours daily with secretarial service nine to five daily. Apply Box 1100, California and Western Medicine.

FOR SALE OR TRADE FOR OTHER PROPERTY IN central part of California. My practice and home which is well equipped for general hospital and especially for maternity work. A real worthwhile proposition in Northern California. Address Box 1110, California and Western Medicine.

FOR SALE—TWELVE-BED, FULLY EQUIPPED HOSPITAL, with medical and surgical practice in rural community of Northern California. Gross cash income, 1932, $19,912.50. Price, $12,000; cash, $5,000; balance easy terms. Address Box 1130, California and Western Medicine.

When urgent treatment in *Pernicious Anemia* is required, you can always rely upon

Chappel's Subcutaneous Liver Extract

The potency of every batch has been tested clinically before it is offered to the profession. It is highly efficient and safe from hazard.

ACCEPTED AMERICAN MEDICAL ASSN. Council on Pharmacy and Chemistry

Boxes of 12 ampoules of 2½ c.c. each

C. RODOLPH GUTH
BIOLOGICS & THERAPEUTIC SPECIALTIES
WILLIAM H. BANKS, M. D., *Medical Director*
PHONE KEARNY 3644
811 Flood Bldg. San Francisco, Calif.
ASSOCIATED WITH
FRATES & LOVOTTI, PROFESSIONAL PHARMACISTS

San Francisco's Jean Parker School in Chinatown. Another instance in which East and West have come together, disproving Kipling's statement that "never the twain shall meet," is to be found in the special sight-saving class for children with seriously defective vision which the San Francisco Board of Education maintains in the Jean Parker School in "Chinatown" here. Although the class is operated on the modern American principle of special educational facilities for physically handicapped children, all of the eleven pupils in this particular class are Chinese boys and girls. Miss Ursula L. Duane, an American, is in charge.

The children use books in large type, and as much of the work as possible is done on the blackboard to relieve eyestrain. Adjustable seats and desks are used; particular care is exercised in regard to the lighting arrangement in the classroom; and every child is taught the touch system on the typewriter as soon as possible so that the eyestrain of handwriting may be avoided.

These same methods are also employed for approximately 6,000 children with seriously defective vision in the 420 other sight-saving classes throughout the country. The Chinese sight-saving class of San Francisco, however, differs from all the others in one respect. In addition to the usual subjects studied by children, the class program calls for a special activity—the building of an American-style home. Since most of the pupils come from homes in which the Chinese mode of living is retained, many of the boys and girls have no conception of what an American home is like. They are learning by building in their school a complete home—consisting of living-room, bedroom, dining-room, and so on.

They are having a great deal of fun doing this, and their discussions regarding it afford an opportunity for further practice in reading, spelling, arithmetic, and other subjects. The dining-room will be the first one furnished. Older boys are making a table, chairs and other furniture. The smaller children are enthusiastically making clay dishes and cutting out silhouette pictures for the walls.

There are at least 50,000 school children in the United States with such seriously defective vision as to necessitate assignment to sight-saving classes, it is estimated by Mrs. Winifred Hathaway, associate director of the National Society for the Prevention of Blindness, New York City. In order to foster the idea of making education possible for partially seeing children, Mrs. Hathaway has visited practically every section of the United States.

The Chinese class here was highly praised by Mrs. Hathaway when she visited it last year on her return from a trip to Hawaii. Mrs. Hathaway pointed out that the children were not only receiving an education and learning the customs of America; their sight was being protected as much as possible and they were receiving vocational guidance. These little Chinese boys and girls are having the entire course of their lives greatly influenced, for they are being guided to select occupations that will be possible for them to execute without too great strain on their remaining sight.

Cocomalt.—It has been estimated that in many cities in the temperate zone, fully 90 per cent of the child population shows the effect of vitamin D deficiency in bone and tooth development.

There is no appreciable amount of vitamin D in common articles of food; but by drinking delicious chocolate-flavor Cocomalt every day, a growing child is definitely safeguarded from a vitamin D deficiency.

For vitamin D is present in Cocomalt in the proportion of thirty Steenbock (300 ADMA) units per ounce—the amount used to make one drink. Mixed with milk according to directions, every cup or glass of Cocomalt a child drinks is equivalent in vitamin D content to two-thirds of a teaspoonful of good cod-liver oil.

Many physicians recommend Cocomalt routinely during pregnancy and lactation, not only because of this rich vitamin D content, but because of the extra proteins, carbohydrates and minerals (calcium and phosphorus) which Cocomalt provides.

BOOK REVIEWS

List of Books Received

BOOKS RECEIVED

Obstetrical Nursing. A textbook on the nursing care of the expectant mother, the woman in labor, the young mother and her baby. By Carolyn Van Blarcom, R. N., formerly Assistant Superintendent and Instructor in Obstetrical Nursing and the Care of Infants and Children at the Johns Hopkins Hospital Training School for Nurses. Author of "The Midwife in England," "Getting Ready to Be a Mother." Third edition. Revised with the assistance of Calvina MacDonald, R. N., Lilla J. Napier, R. N., Lottie M. Morrison, R. N., Anne A. Stevens, R. N., Chelly Wasserberg, R. N. Cloth. Pp. 651, with 251 illustrations and 12 charts. Price, $3. New York: The Macmillan Company, 1933.

Nervous Breakdown—Its Cause and Cure. By W. Beran Wolfe, M. D., Director, the Community Church Mental Hygiene Clinic, New York. Cloth. Pp. 240. Price, $2.50 net. New York: Farrar & Rhinehart, 1933.

Actinotherapy Technique. An outline of indications and methods for the use of modern light therapy. With foreword by Sir Henry Gauvain, M. D., M. Chir. (Camb.), F. R. C. S. (Eng.) Fabric. Pp. 168. Price, $1 net. Newark, New Jersey: Alpine Press, Inc., 1933.

Food, Nutrition, and Health. By E. V. McCollum, Ph. D., Sc. D., and J. Ernestine Becker, M. D., Professor, and Associate of Biochemistry, School of Hygiene and Public Health, Johns Hopkins University, Baltimore, Maryland. Third edition, rewritten. Cloth. Pp. 146. Price, $1.50. Baltimore: E. V. McCollum and J. Ernestine Becker, 1933.

The 1933 Year Book of Radiology. Diagnosis edited by Charles A. Waters, M. D., Associate in Roentgenology, Johns Hopkins University; Assistant Visiting Roentgenologist, Johns Hopkins Hospital. Therapeutics edited by Ira I. Kaplan, B. Sc., M. D., Director, Division of Cancer, Department of Hospitals, City of New York; Visiting Radiation Therapist, Bellevue Hospital; Director, New York City and Brooklyn Cancer Institutes. Cloth. Pp. 804, with 690 illustrations. Price, $7. Chicago: The Year Book Publishers, Inc., 1933.

Behind the Doctor. By Logan Clendening, M. D. With illustrations from Contemporary Sources, Portraits, Photographs, and Original Drawings by James E. Bodrero and Ruth Harris Bohan. Cloth. Pp. 458, with 147 illustrations. Price, $3.75 net. New York: Alfred A. Knopf, 1933.

United States Naval Medical Bulletin. Vol. XXXI, No. 4, October, 1933. Published quarterly for the information of the Medical Department of the Navy. Issued by the

(Continued on Next Page)

- - - New BOOKS

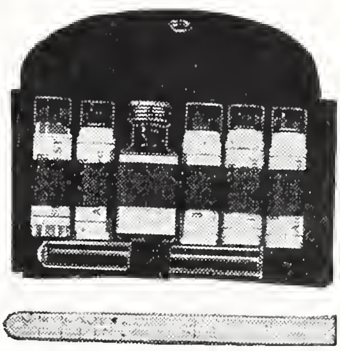
Clendening: Behind the Doctor $3.75
Copeman: Treatment of Rheumatism . . . 3.25
Glasser: Science of Radiology 4.50
Harris: Bone Growth in Health and Disease . 10.50
Redman: Romance of Research 1.00

Books gladly sent on approval

J. W. STACEY, INC.
Medical and Scientific Books
GArfield 0838
236-238 Flood Bldg. San Francisco

NEW!
DUNKLER URINE TEST KIT
6 TESTS

Dunkler Urine Tests in Compact Case, including reagents for Sugar (Qual.), Albumin (Qual.), Albumin (Quant.), Acetone, Bacterial Infection, and Chronic Interstitial Nephritis with Testometer, only $5.00



All Tests Completed In One-Half To Eight Minutes

This is a scientific, tested product that will save the practitioner valuable time and money with greater accuracy in his urinary analysis. These new reagents require No Boiling, Corrosive Acids or the use of a Microscope. It is a rapid, exact, easy and scientific method for the examination of urine. The simplicity of the procedure and the reliability of the reactions will astound you. The products will not deteriorate with age or climatic changes. The cost per test is about one-half cent.

A. S. ALOE CO.
932 S. Hill St. LOS ANGELES, CAL.

WALTERS SURGICAL COMPANY
- SERVICE -
521 SUTTER STREET : SAN FRANCISCO : *Telephone* GARFIELD 7995
PHYSICIANS' · SURGEONS' · HOSPITAL · SUPPLIES
MAIL AND TELEPHONE ORDERS GIVEN PROMPT AND CAREFUL ATTENTION

TWIN PINES SANITARIUM
BELMONT, CALIFORNIA
INTERNAL MEDICINE AND SELECTED NEUROPSYCHIATRIC CASES
CLARE MEHRTENS, *Director* WILL REBEC, M. D., *Medical Director*
Number of Patients Limited
Accredited to AMERICAN MEDICAL ASSOCIATION
Telephone BELMONT 111

APPROVED CLINICAL PATHOLOGISTS

American Medical Association Essentials for An Approved Clinical Pathologist

An approved clinical pathologist should be a licensed graduate of medicine. He shall have specialized in clinical pathology, bacteriology, pathology, chemistry, and other allied subjects for at least three years, and he should be reasonably familiar with the manifestations of disease in the body. The director of a clinical laboratory shall be on full time or have definite hours of attendance, devoting the major part of his time to this specialty. A clinical laboratory is an institution organized for the practical application of the fundamental sciences by the use of specialized apparatus, equipment and methods, for the purpose of ascertaining the presence, nature, source, and progress of disease in the human body.

The following Clinical Pathologists directing private laboratories in California are approved by the Council on Medical Education and Hospitals of the American Medical Association:

Clinical Laboratory of Drs. W. V. Brem, A. H. Zeiler, Roy W. Hammack and G. D. Maner, 657 So. Westlake Avenue, Los Angeles, California.

Zera E. Bolin, M. D., 450 Sutter Street, San Francisco, California.

These laboratories use standard methods and are fully equipped to make all clinical examinations of recognized value in: **Tissue Pathology, Bacteriology, Hematology, Serology, Bio-Chemistry, Kolmer Wassermanns, Kahn test, Medico-legal, Basal metabolism, Blood chemistry, Hormone Test for Pregnancy, Parasitology, Cardiology, Autogenous vaccines, etc.**

Mailing containers sent on request. Special delivery postage insures prompt, accurate service.

BOOKS RECEIVED

(Continued from Preceding Page)

Bureau of Medicine and Surgery, Navy Department, Division of Publications, Lieutenant Commander Louis H. Roddis, Medical Corps, United States Navy, in charge. Compiled and published under the authority of Naval Appropriation Act for 1934, approved March 3, 1933. Paper. Pp. 126. Washington: United States Government Printing Office, 1933.

Record-Librarian's Manual. A Guide to Organizing, Classifying, and Filing Clinical Records and Medical Literature. By Carl E. Black, A. M., M. D., F. A. C. S., Jacksonville, Illinois. Cloth. Pp. 154. Price, $2. St. Paul: Bruce Publishing Company, 1933.

Obstetrics and Gynecology. By eighty leading specialists. Edited by Arthur Hale Curtis, M. D., Professor and Head of the Department of Obstetrics and Gynecology, Northwestern University Medical School; Chief of the Gynecologic Service, Passavant Memorial Hospital, Chicago, Illinois. Complete in three volumes and separate desk index. Cloth. Pp. 3500, with 1664 illustrations, many in colors. Price, $35 per set. Philadelphia and London: W. B. Saunders Company, 1933.

Diseases of the Chest and the Principles of Physical Diagnosis. By George William Norris, A. B., M. D., formerly Professor of Clinical Medicine in the University of Pennsylvania; Chief of Medical Service "A," Pennsylvania Hospital; and Henry R. M. Landis, A. B., M. D., Sc. D., Professor of Clinical Medicine in the University of Pennsylvania; Director of Clinical and Sociological Departments of the Henry Phipps Institute of the University of Pennsylvania. With a chapter on the Transmission of Sounds Through the Chest by Charles M. Montgomery, M. D., formerly Physician to the Phipps Institute, Philadelphia; and a chapter on the Electrocardiograph in Heart Disease by Edward B. Krumbhaar, Ph. D., M. D., Professor of Pathology, University of Pennsylvania, School of Medicine. Fifth edition, revised. Cloth. Pp. 997, with 478 illustrations. Price, $10 net. Philadelphia and London: W. B. Saunders Company, 1933.

BOOK REVIEWS

Roentgenographic Studies of the Urinary System. By William E. Lower and Bernard H. Nichols. Pp. 812. Illustrated. St. Louis: The C. V. Mosby Company, 1933. Price, $16.

This book makes available to all of us the experience of a clinic which has studied and got the benefit of a very large amount of urologic material. The first seventy pages of this thick volume cover the technique of roentgen examination of the urinary tract and the differential diagnosis of the right upper abdominal quadrant.

The authors stress the necessity of making the *roentgen* diagnosis on *roentgen* evidence. They believe that the correlation of cystographic, laboratory, roentgen, and clinical findings should be done after each has gone as far as it can alone.

The chapter on technique is brief but sufficient. (I disapprove of the direction of Doctor Nichols' recommended stereo shift. Slight breathing movements can lead to false stereo if the shift is made lengthwise of the patient.)

The chapter on bladder is pretty thorough. Some radiologists might differ with Doctor Nichols in details of technique. The pictures of urinary calculi (removed) are somewhat misleading because they were evidently not immersed in water.

Doctor Nichols evidently studies the ureter very carefully, and many of us could learn from him to be more painstaking. He shows a thorough appreciation of the pitfalls in the diagnosis of ureteral stone and ureteral spasm. He mentions ureteral tumor, but gives no estimate of its rarity.

He gives a good chapter on examination of male urethra, but gives few examples of disease there.

I agree with the authors' disapproval of catharsis in routine preparation for films of the kidneys. I think Doctor Nichols fails to understand the theory of the Bucky diaphragm, which increases the contrast but does not in fact increase the sharpness of a roentgenogram. The authors do not mention the burette method of insuring against too high a pressure in injecting the kidney pelves. I do not share the authors' feeling that to inject both sides at the same sitting is dangerous, or at least that it adds more danger if one has undertaken the hazard of catheterizing both ureters at the same time.

I feel somewhat skeptical of the author's statement that spasm of the psoas muscle may obliterate its shadow and so imitate the appearance of a perinephric abscess. Also their remark about a fluid wave above the kidney needs

(Continued on Page 14)

As a prophylactic measure during the coming season

As a spray or topical application in the nose and throat, Hexylresorcinol Solution S. T. 37 is of particular interest to physicians as a prophylactic measure during the coming season.

Hexylresorcinol Solution S. T. 37 exerts a safe, rapid and powerful antiseptic action. In laboratory experiments, a one-to-three dilution of this highly active bactericide destroys vegetative bacteria on less than 15 seconds' contact. It retains its activity when applied to tissue surfaces and affords rapid penetration of microscopic crevices.

Hexylresorcinol Solution S. T. 37 is pleasant for the patient. It does not irritate or burn, or produce offensive chemical tastes or odors. It is absolutely non-toxic.

Hexylresorcinol Solution S. T. 37 is supplied in five- and twelve-ounce bottles at new reduced prices.

Sharp & Dohme

PHARMACEUTICALS BIOLOGICALS
PHILADELPHIA BALTIMORE MONTREAL

ACCEPTED
AMERICAN MEDICAL ASSN.
Council on Pharmacy and Chemistry

HEXYLRESORCINOL SOLUTION S. T. 37

(*Liquor Hexylresorcinolis 1:1000*)

DANTE SANATORIUM

Known for the High Standard of Cuisine and Service

Broadway and Van Ness Avenue

SAN FRANCISCO CALIFORNIA

Edward A. Trenkle, *Managing Director* *Telephone* GRaystone 1200

BOOK REVIEWS

(Continued from Page 12)

qualifying, for it would appear only if the perinephric abscess cavity contained gas as well as pus.

In relation to stones, the authors do not, I think, show a proper appreciation of the importance of the roentgen density of the material in which the stone is embedded, fluid or formation. They have also overlooked an important technique for the differentiation of kidney stones from gall stones, namely, the lateral view.

They give a chapter on intravenous urography. Their disinclination to put pressure over the lower ureters is not subscribed to by all radiologists, although I, myself, am in agreement. Under contraindications one might misread their paragraph to think that hepatic disease interferes with the test, whereas I take it they are really talking about an associated kidney deficiency.

On page 55 there is a misprint, "hypertonic" for "hypotonic."

The authors might explain more clearly that the brilliant density of a urogram is partly dependent upon the absolute diameter of the ureter or calyx considered.

The listing of the above criticisms should not be taken as severe criticism of the text as a whole, for your reviewer feels that the material is, on the whole, very good and expressed in unusually concise manner.

The remaining 730 pages are devoted to examples showing the roentgenographic findings and the briefest notes on clinical and operative findings in 443 cases. These are divided among four headings, namely, urethra, bladder, ureters, and intravenous urography. The ureteral studies and the kidney studies are further subdivided, so that it is easier to find a collection for any narrow field of interest. By reference to the index it is possible to find even more narrowly an example of what one is looking for.

The reproductions are, on the whole, very good indeed, and their reading is made easy by line drawings in miniature accompanying each one.

There is here collected a truly enormous experience of roentgen diagnosis of the urinary tract. If one would study them carefully, he could make himself an expert of fifty years' experience; in fact, there is much more than what would be the experience of fifty years of radiology in an ordinary hospital. The collection of anomalies of the ureters and kidney pelves should prove of enormous value as a reference to decide in an individual case whether what one sees could be an anomaly. The only drawback is that for many of these cases we have only the opinion of the authors without real proof that the matter is an anomaly and not disease.

I consider this book not only valuable for the library of a specializing radiologist, but also for the urologist. The urologist might often use this material as a basis for a healthy skepticism of the opinion expressed by his consulting radiologist. It is well known that an estimate of the dependability of a roentgen reading is one of the most difficult to arrive at in evaluating the relative weight to be put on x-ray and clinical findings. The mass of experience in this book should serve to put the matter on at least a subconscious statistical basis. R. R. N.

Essentials of Prescription Writing. By Carey Eggleston. Fifth edition. Pp. 155. Philadelphia and London: W. B. Saunders Company, 1933.

This widely used compendium of prescription writing is very well known generally among the medical profession because for years it has been a textbook in medical schools. Grammatical prescription Latin, weights and measures, dosage, vehicles, incompatibilities, modes of administration, and other practical aspects of prescription writing are ably discussed. In the fifth edition the chapter on vehicles has been amplified to provide a wider range of colors and flavors for the disguising of unpleasant medicinal agents. A. B. S.

Surgical Anatomy. By C. Latimer Callander. Pp. 1115. Illustrated. Philadelphia and London: W. B. Saunders Company, 1933. Price, $12.50.

Here we have the results of an enormous amount of conscientious work, by a San Francisco author, in an elegant book of large size, excellent paper and print, and beautifully illustrated.

Anatomy as a subject should kindle in us a live and wide interest in all forms, present and past, of animal life, both human and otherwise, and should give a foundation for our thought along most of medicine and surgery. He who says anatomy is dry confesses dehydration of his own cerebrum, for the consideration of each and every anatomical part should stimulate in us flights of philosophical thought such as: Why is it there? What is its purpose? How did it evolve down through the ages

(Continued on Page 17)

FALL AND WINTER ARE THE DANGEROUS SEASONS FOR RESPIRATORY INFECTIONS!

"The Main Danger of Rickets is that it Decreases the Resistance"

"Rickets is a disease which affects the entire body although the most noticeable signs of it are seen in the bones." . . . . .

"While rickets is often looked upon as a disease which in itself does not threaten life, they state that it does threaten life and may be the direct cause of death when it deprives the thorax of its rigidity. It increases the danger to life in respiratory infections, for example, tuberculosis and pneumonia."

(McCollum & Simmonds, The Newer Knowledge of Nutrition, 4th Ed., 1929.)

Clinical experience shows that any baby taking its daily ration of DRYCO *is thereby protected against rickets*

PRESCRIBE

DRYCO

NRA MEMBER U.S. WE DO OUR PART

Made from superior quality milk from which part of the butterfat has been removed, irradiated by the ultra-violet ray, under license by the Wisconsin Alumni Research Foundation (U. S. Pat. No. 1,680,818) and then dried by the "Just" Roller Process.

ACCEPTED AMERICAN MEDICAL ASSN. Committee on Foods

PROTECT INFANTS AGAINST RICKETS NOW!

Samples and literature on request

THE DRY MILK COMPANY, *Inc.,* Dept. C.W., 205 E. 42nd Street, New York, N. Y.

ALL DRYCO IN THE HANDS OF DRUGGISTS IS IRRADIATED

One of a series of advertisements prepared and published by PARKE, DAVIS & CO. in behalf of the medical profession. This "See Your Doctor" campaign is running in the *Saturday Evening Post* and other leading magazines.

"Things I wish my Mother hadn't taught me"

EVERY young woman who embarks upon the great adventure of Motherhood is overwhelmed with advice from those who love her most.

The advice may be on some apparently trivial matter—clothing, feeding, what to do for an upset stomach, or the way to nip a cold in the bud.

Yet many a brand-new mother has learned that often the reward for following such advice is regret. She has said, not in bitterness, but in sadness, "I wish I had never been told to do that." She has learned, too late, that many of the beliefs of a generation ago have been cast into disrepute by the findings of recent years.

For these past few decades have been a Golden Age of Medicine. Much has been learned . . . much has been disproved. And, as a result of developments and discoveries that have taken place since you yourself graduated from childhood, the baby of today has a better chance of arriving into the world safely . . . of successfully weathering the treacherous storms of infanthood . . . and of enjoying a healthy, vigorous childhood.

A better chance, that is, if medical science is given the opportunity of exerting its influence on the child and on the mother . . . It is difficult not to take advice from those who love us most. But when so fragile and precious a thing as a baby's health is at stake, there is one person, and one person only, whose advice you can safely follow.

That person is your doctor.

PARKE, DAVIS & CO.
DETROIT, MICHIGAN
The World's Largest Makers of Pharmaceutical and Biological Products

NRA
MEMBER
U.S.
WE DO OUR PART

Lilly

ELI LILLY AND COMPANY

FOUNDED 1876

Makers of Medicinal Products

AMYTAL

ISO-AMYL ETHYL BARBITURIC ACID

For Sedation and Hypnosis

Amytal Tablets are useful in insomnia due to arterial hypertension, mental worry, psychosis, fatigue, narcotic addiction or withdrawal, alcoholism, nervousness, and in many other conditions where repose is needed. . . . Supplied through the drug trade in 1½-grain (0.1 Gm.) tablets, and in ¾-grain (0.05 Gm.) "half-strength" tablets in bottles of 40 and 500.

Prompt Attention Given Professional Inquiries

Principal Offices and Laboratories, Indianapolis, Indiana, U.S.A.

Lilly

A Group of Distinguished Products

OF

THE LILLY LABORATORIES

For Effective Antisepsis

Merthiolate—Solution, Tincture, Jelly
(water-soluble)

For Preanesthetic Use

Sodium Amytal Pulvules—(filled capsules)
3 grains

For Convulsions

Ampoules Sodium Amytal

For Diabetes Mellitus

Iletin (Insulin, Lilly)

Biologicals

Lilly's Antitoxins, Serums, and Vaccines

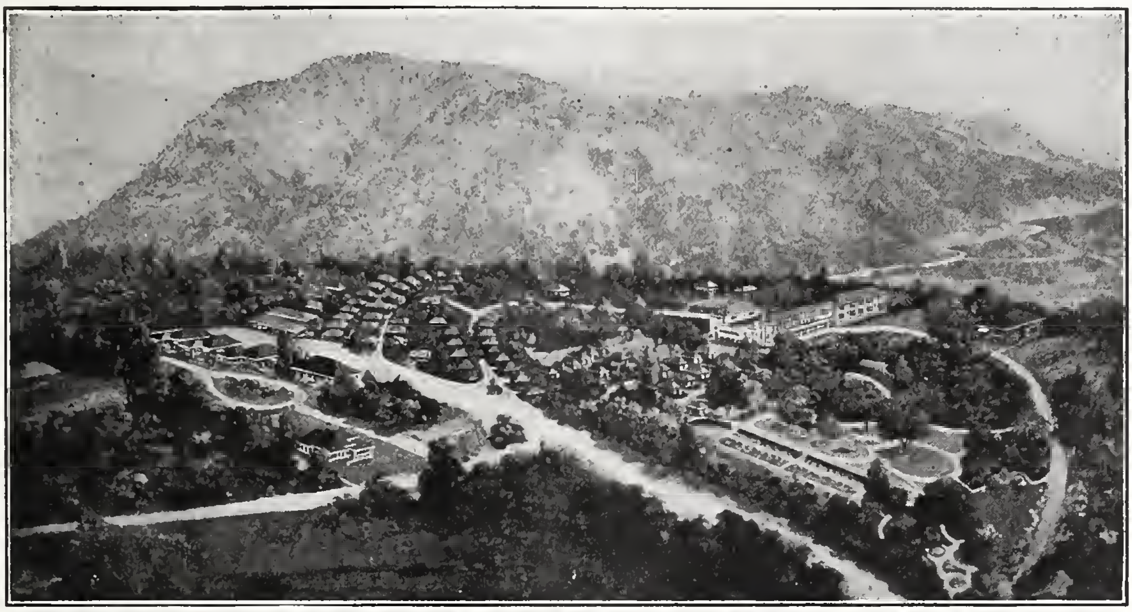
For Nasal Decongestion

Ephedrine—Inhalants, Compound and Plain;
Ointment Compound; Jelly (water-soluble)

Prompt Attention Given Professional Inquiries

Principal Offices and Laboratories, Indianapolis, Indiana, U.S.A.

POTTENGER SANATORIUM AND CLINIC
FOR DISEASES OF THE CHEST MONROVIA, CALIFORNIA



Twenty-eight years' experience in meeting the problems of the tuberculous patient.
Located in the foothills of the Sierra Madre mountains, at an elevation of 1000 feet. Sixteen miles east of Los Angeles, on the main line of the Santa Fe. Reached also by the Pacific Electric. Equipped for the scientific treatment of tuberculosis and other diseases of the chest. Beautiful surroundings. Close personal attention. Excellent food.
A clinic for the study and diagnosis of all diseases of the chest, including asthma, lung abscess and bronchiectasis is maintained in connection with the institution.
Weekly rates from $25 up, including medical attention, medicines (except expensive remedies), and general nursing. Extra charge for operative measures except pneumothorax.

Los Angeles Office
WILSHIRE MEDICAL BUILDING
1930 Wilshire Boulevard

For particulars address:
POTTENGER SANATORIUM
MONROVIA, CALIFORNIA

BOOK REVIEWS

(Continued from Page 14)

and also embryologically? What are its modifications in other animals and for what purpose? What are its functions and its mechanics, and what are its surgical aspects?

This book deals with the relation between anatomy and surgery and attempts to correlate between the two in association concepts for surgical work.

Its arrangement is regional. For each part the anatomy in a rather general way is lightly reviewed and then the surgical aspects are discussed, including general principles, methods of approach, and even a little of methods of treatment. In a way it presupposes a knowledge gained from anatomies and surgeries, as it does not include the detailed exactness of either, but instead points out to the student the connecting links and interrelationship of the two. It maintains throughout the surgical viewpoint instead of the academic, and could be entitled either "anatomical surgery" or "surgical anatomy." In shaping this correlation it is of value to the student and young doctor, for whom it is particularly intended. Also, for the more advanced, though much is obvious and dilute, still there are throughout in this compilation of facts many points that are of great value in surgery. The field covered in this compilation is so vast for one book and by one author that, of necessity, only the superficial aspects can be covered.

Though in the text the descriptions may not always paint the picture for the reader with the graphic crispness, command of language, and the touch of genius of such anatomists as Gray and Cunningham, the breadth of scope, the unique field, the great wealth of material gathered, and especially the excellent illustrations, give a value to this book all its own.

Few books are so profusely and well illustrated. The many original drawings by Ralph Sweet and Kay Hyde are sharp and graphic and well done, and show many valuable views of anatomy not to be found elsewhere. There are also many illustrations from other books, and especially from Babcock's "Surgery." These are all remarkably well selected. Certain anatomical points, often hazy in our minds, are not left to our imagination, but are clearly portrayed, showing just what the surgeon is desirous of seeing.

Great credit is due the author for his courage and work in presenting this commendable book to the profession.

S. B.

TWENTY-FIVE YEARS AGO

(Continued from Text Page 360)

DISCUSSION

Professor Jaffa, Berkeley: It seems to me that these are very interesting and instructive papers, and exhibit great progress in the pure food movement. Such efforts are a wonderful help and encouragement to those who are engaged in this movement. I think such efforts are along the right line—that is, educating the public or layman. . . .

Doctor Ward, University of California: I have listened with a great deal of interest to the accounts of the progress that Los Angeles has made along the lines of clean milk. Pasadena is to be congratulated also upon having brought about the tuberculin test. I have participated in two failures of that kind and can appreciate the difficulties of this work. Palo Alto tried this scheme several years ago and failed. Berkeley has tried for three or four years to bring about these results and has practically failed. . . .

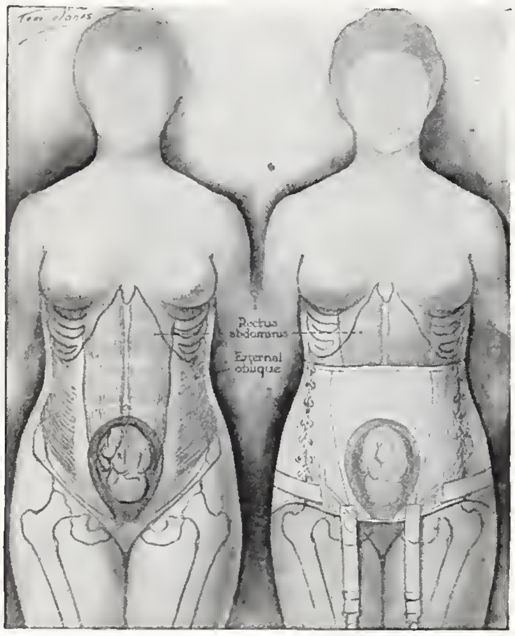
Dr. T. C. McCleave, Berkeley: I cannot agree with the speakers who have brought up the question of politics. I think the introduction of pure milk depends upon the attitude of the family physician among his patients. . . .

Dr. James H. Parkinson, Sacramento: This whole question consists of the education of the public. If the public is properly taught, there is no question but that we can accomplish all we signify is to be done. In this connection we cannot but wonder at the situation in San Francisco at the present time. The mayor of 1908 has thought best to put up a Board of Health, consisting of five laymen and two physicians. Whether this was done from the sanitary or the political standpoint, I do not know. . . .

Dr. F. C. E. Mattison, Pasadena (closing discussion): One word with reference to the term "certi-

(Continued on Next Page)

ANATOMICAL STUDIES
FOR THE PRACTITIONER



Anterior view in five months' pregnancy showing relation of fetus to bones and superficial muscles of abdomen. Figure at right illustrates influence of supporting garment on structures.

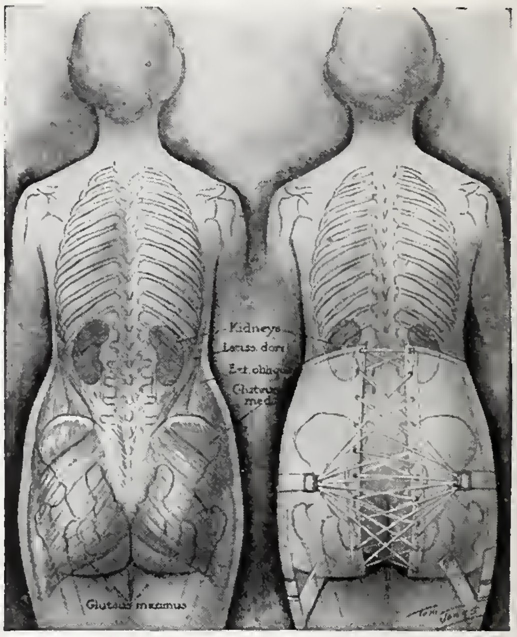
as Related to PREGNANCY

A set of Anatomical Studies in book form is furnished to physicians on request—upon receipt of 20c to cover mailing costs.

CAMP
TRADE MARK

Physiological Supports Scientifically Designed

NRA MEMBER U.S. WE DO OUR PART



Posterior view of female figure showing lumbar and gluteal muscles, kidneys, etc. Figure at right indicates support given to these structures by Camp physiological maternity garment.

S. H. CAMP & COMPANY
Manufacturers, JACKSON, MICHIGAN

CHICAGO
1056 Merchandise Mart

NEW YORK
330 Fifth Ave.

LONDON
252 Regent St., W.

S. H. CAMP & CO. OF CANADA, LTD.
813 Mercer St., Windsor, Ont., Canada

TWENTY-FIVE YEARS AGO

(Continued from Preceding Page)

fied milk." Certified milk means milk certified to for cleanliness.

Dr. G. H. Kress, Los Angeles: If the county of Los Angeles can get pure milk in five years, the state of California can certainly get it in five years. . . .

From an article on "Luetic Stigmata of Importance to the General Practitioner" by Herbert C. Moffitt, M. D., San Francisco.

In consultation, as in ward work, the question of an old syphilitic infection must frequently be raised. Wise skepticism is nowhere more in place than in dealing with a negative history in face of a suspicious clinical picture. Crocker got no history in 20 per cent of his cases of tertiary syphilides. The dictum of Gowers is to be remembered: "If there has been any possibility of exposure to infection, the disease cannot be considered to be out of the question." . . .

From an article on "Syphilis as Seen by the Eye, Ear, Nose, and Throat Specialist" by Hayward G. Thomas, M. D., Oakland.

In considering this subject, my conclusion is that we specialists see a great deal more of syphilis than we should, for the reason that it is the least recognized and the poorest treated disease in general.

From an article on "Syphilis of Bones and Joints" by S. J. Hunkin, M. D., San Francisco, and George A. Harker, M. D., San Francisco.

In speaking of lues as it involves bones and joints, it appears best to give the salient points of a few case histories, not as a report of cases, but rather to present ordinary types as they appear with their characteristic marks to the orthopedic specialist. . . .

Nostrums—Action of San Joaquin County.

To the Physicians and Surgeons of San Joaquin County:

Dear Doctors:—There has been a special committee appointed by the San Joaquin County Medical Society to look into the abuses arising out of the use of proprietary medicines. These abuses are many and affect not only the physician, but the druggist and people at large as well. . . .

University of California Hospital.

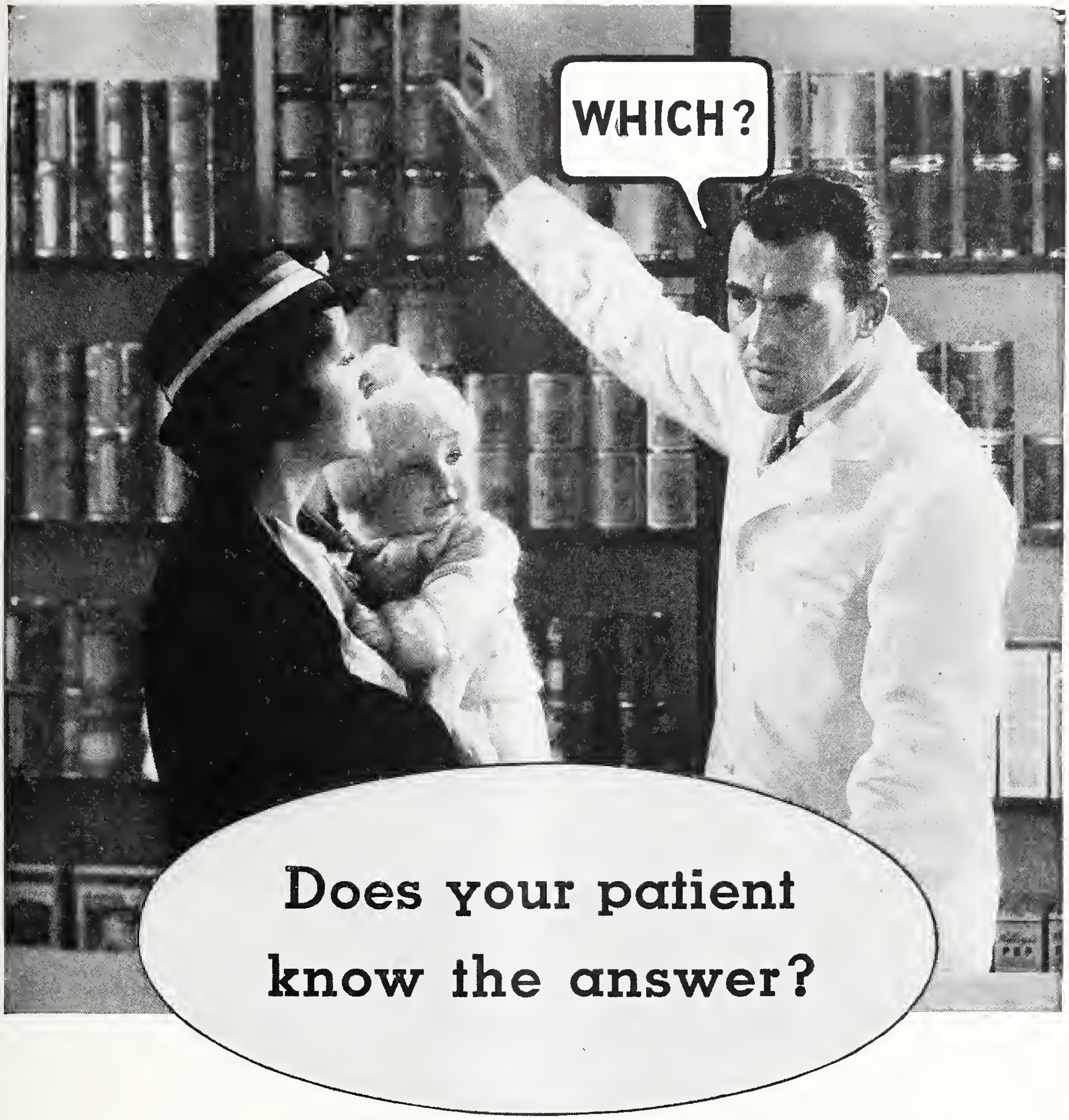
The University of California Hospital has been projected for some years, but the actual beginning of construction had been delayed owing to the difficulty of procuring the very large sum of money which was desired in order that the institution might start with a proper plant and an adequate endowment and that the Regents of the University and the faculty of the medical department might not have the burden of support upon them, as well as the task of management. . . .

BOARD OF MEDICAL EXAMINERS

(Continued from Text Page 360)

dour, turning gray at the temples, left eye brown, right eye artificial. Age, about fifty; weight, about 145. Carries a tan suitcase and tan hand bag. He is said to be wanted in Oregon on a charge of violating the Medical Practice Act.

(Continued on Page 21)



Does your patient know the answer?

WHEN you tell a mother to use Evaporated Milk for her baby, do you specify the brand, or is that left to her to decide?

In prescribing Evaporated Milk for infant feeding, you have in mind a milk that meets your high standards of quality. But those high standards may not be known to the mother. *She needs your advice to guide her choice.*

In all the Evaporated Milks produced by The Borden Company, the physician finds the quality he demands for infant feeding. Careful selection of raw milk and rigid safeguards throughout the process of manufacture guarantee the quality, purity and freshness of every Borden brand . . . Borden's Evaporated Milk . . . Pearl . . . Maricopa . . . Oregon . . . St. Charles . . . Silver Cow. All these Borden brands are accepted by the American Medical Association Committee on Foods.

Write for free sample of Borden's Evaporated Milk and scientific literature. Address The Borden Company, Dept. 327, 350 Madison Avenue, New York, N. Y.

The Borden Company was the first to submit evaporated milk for acceptance by the Committee on Foods of the American Medical Association. Borden's was the first evaporated milk to receive the seal of acceptance of this Committee.

Borden's

EVAPORATED MILK

ACCEPTED AMERICAN MEDICAL ASSN. Council on Pharmacy and Chemistry

COUNCIL ACCEPTED

ACCEPTED AMERICAN MEDICAL ASSN. Council on Pharmacy and Chemistry

economical for vitamin A

MEAD'S HALIBUT LIVER OIL

(Without Viosterol)
32,000 U.S.P. Vitamin A Units and 200 Steenbock Vitamin D Units per gram. 10 cc. and 50 cc. bottles.*

economical for vitamin D

MEAD'S VIOSTEROL IN OIL 250 D

(Contains No Vitamin A)
3,333 Steenbock Vitamin D Units per gram. 5 cc. and 50 cc. bottles.

economical for vitamins A and D

MEAD'S VIOSTEROL IN HALIBUT LIVER OIL 250 D

32,000 U.S.P. Vitamin A Units and 3,333 Steenbock Vitamin D Units per gram. 5 cc. and 50 cc. bottles.

*brown bottles in light-proof cartons to protect against deteriorating action of light; supplied with combination dropper-stopper.

MEAD JOHNSON & CO., Evansville, Indiana, U.S.A.

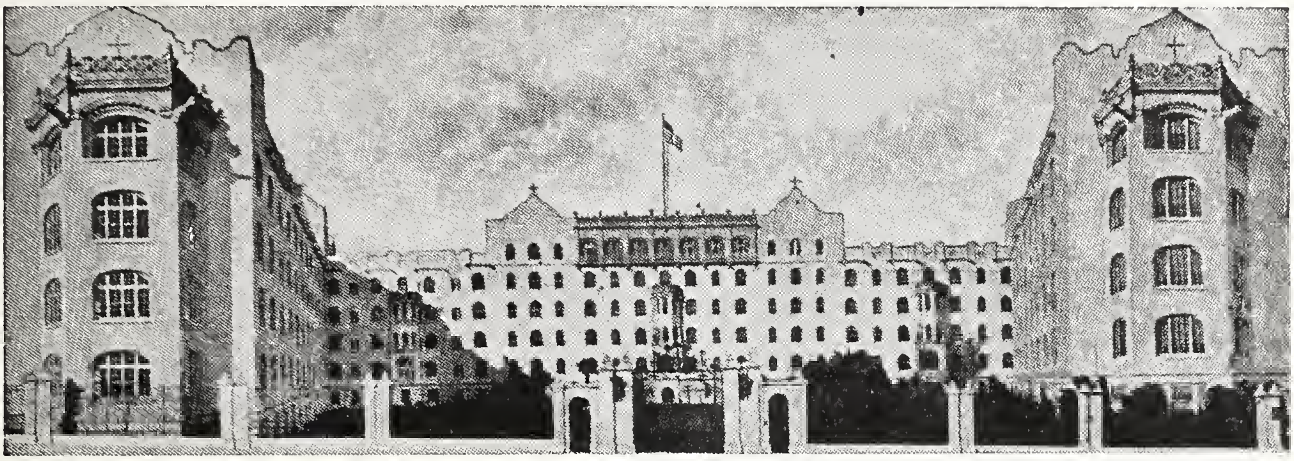
Please enclose professional card when requesting samples of Mead Johnson products to cooperate in preventing their reaching unauthorized persons

ST. MARY'S HOSPITAL

2200 HAYES STREET
SAN FRANCISCO

Conducted by Sisters of Mercy

Accredited by the American Medical Association. Open to all members of the California Medical Association. Accredited School of Nursing and Out-Patient Department.



PROFESSIONAL STAFF

Surgery
T. Edward Bailly, Ph.D., F.A.C.S., M.D.
Guido Caglieri, B.Sc., F.R.C.S., F.A.C.S., M.D.
Edward Topham, F.A.C.S., M.D.
James Eaves, M.D.
F. F. Knorp, M.D.
Hubert R. Arnold, F.A.C.S., M.D.
Edmund Butler, F.A.C.S., M.D.
Rodney A. Yoell, M.D.
T. T. Shea, M.D.

Urology
Charles P. Mathe, F.A.C.S., M D.
George F. Oviedo, M.D.
Thomas E. Gibson, F.A.C.S..M.D.

Medicine
J. Haderle, M.D.
H. V. Hoffman, M.D.
Stephen Cleary, M.D.
A. Diepenbrock, M.D.
J. H. D. Roger, M.D.
Thomas J. Lennon, M.D.
James M. Sullivan, M.D.

Heart
Harry Spiro, M.D.

Obstetrics
Philip H. Arnot, M.D.
Charles C. Mohun, M.D.

Eye, Ear, Nose and Throat
F. J. S. Conlan, F.A.C.S., M.D.
L. A. Smith, M.D.
J. J. Kingwell, M.D.
T. Stanley Burns, M.D.

Orthopedics
Thomas J. Nolan, M.D.
J. J. Loutzenheiser, M.D.

Pediatrics
Randolph G. Flood, F.A.A.P., M.D.

Neurological Surgery
Edmund J. Morrissey, M.D.

Thoracic Surgery
William B. Faulkner, Jr., M.D.

Gastroenterology
Edward Hanlon, M.D.
Frank A. Kinslow, M.D.

Neurology
Milton B. Lennon, M.D.

Dermatology
H. Morrow, M.D
Harry E. Alderson, M.D.

Pathology
Elmer W. Smith, M.D.

Radium Therapy
Monica Donovan, M.D.

Dentistry
Thomas Morris, D.D.S.
Francis L. Meagher, D.D.S.

BOARD OF MEDICAL EXAMINERS

(Continued from Page 18)

Charles H. Feasler, M. D., reported on August 25, 1933, that while his automobile was standing near the Hotel Green, Pasadena, it was robbed of its contents, among which, he reported, was his Illinois Medical College diploma, issued in 1904; Illinois state license, issued in 1909; a fully completed reciprocity application; and miscellaneous letters from various physicians, which he intended to file with the California board as a part of his application.

Reports relate that George W. Sims, previously found guilty of violation of Section 17 of the Medical Practice Act, was denied a new trial on September 28 and was sentenced to serve 180 days in the city jail. He gave notice of appeal and was committed to jail in default of $2,500 appeal bond.

"After a bedridden Oakland woman signed a complaint charging him with attacking her while she was under the influence of a drug, Dr. Oscar W. de Vaughn, negro physician, 1234 Eighth Street, Oakland, was arrested yesterday on a statutory charge and later released on bail. . . ." (San Francisco *Chronicle*, October 18, 1933.)

"Charged with suspicion of receiving stolen property, Dr. John Robinson, thirty, physician, with offices at 432 South Main Street, was arrested Thursday, September 8, at two o'clock, according to police reports, by Detective Sergeant Kull of the Burglary Detail. . . . The goods were reported found in Doctor Robinson's office on South Main Street, and some at 446¾ North Westmoreland. The property is said to be owned by Doctors Y. S. Kenin, 406 South Main Street, A. T. Ongalls, Los Angeles, and Reginald Francis, 239 East Manchester Drive. Reports state that Robinson is alleged to have paid one 'Pat Woods' with 'shots' of morphin for the articles. The report further asserts that Woods has been burglarizing various doctors' offices, taking the goods to the office of Dr. John Robinson, who paid the dope addict by giving him the drug. . . . The young physician is said to have spent three days in jail, previous to his arraignment in Judge Kincaid's court last Monday. . . ." (Los Angeles *Eagle*, September 15, 1933.)

"Edward R. Cook, formerly known as 'the Bishop,' sentenced to a term of seventeen years in San Quentin prison for his part of an illegal operation that ended in the death of a Mrs. Betty Buckles in 1928, yesterday appealed for a pardon through Alameda County officials. Cook was paroled last June. He formerly headed the Oakland Psycoscophy Institute" (San Francisco *Chronicle*, August 30, 1933). (Previous entries, February, March, and April, 1928.)

"Alleged unethical methods used by Rafael Pacata, forty, South American 'healer' in treating a seventeen-year-old girl for sinus trouble, led to his arrest on a statutory charge. . . ." (San Francisco *Examiner*, October 9, 1933.)

"George Brison, chiropractor, was found guilty of manslaughter yesterday in the court of Superior Judge Jacks. Brison was charged with performing an illegal operation that was fatal to Mrs. Zorka Hendry, 1446 South Van Ness Avenue. He will be sentenced tomorrow." (San Francisco *Examiner*, October 5, 1933.)

FRANKLIN HOSPITAL 14th and Noe Streets

BEAUTIFULLY located in a scenic park—Rooms large and sunny—Fine Cuisine—Unsurpassed Operating, X-Ray and Maternity Departments.

⁂

Training School for Nurses

⁂

For further information
Address
FRANKLIN HOSPITAL
San Francisco

LIVERMORE SANITARIUM

The Hydropathic Department devoted to the treatment of general diseases excluding surgical and acute infectious cases. Special attention given functional and organic nervous diseases. A well equipped clinical laboratory and modern X-ray Department are in use for diagnosis.

The Cottage Department (for mental patients) has its own facilities for hydropathic and other treatments. It consists of small cottages with homelike surroundings, permitting the segregation of patients in accordance with the type of psychosis. Also bungalows for individual patients, offering the highest class of accommodation with privacy and comfort.

GENERAL FEATURES

1. Climatic advantages not excelled in United States. Beautiful grounds and attractive surrounding country.
2. Indoor and outdoor gymnastics under the charge of an athletic director. An excellent Occupational Department.
3. A resident medical staff. A large and well trained nursing staff so that each patient is given careful individual attention.

Information and circulars upon request
Address: CLIFFORD W. MACK, M. D.
Medical Director
LIVERMORE, CALIFORNIA
Telephone 7-J

CITY OFFICES:

SAN FRANCISCO
450 Sutter Street
DAvenport 3523

OAKLAND
1624 Franklin Street
GLencourt 5989

STUART MEDICAL GASES

Announcing the NEW

Hi-Pure
Nitrous Oxide

99.5% PURE

Our laboratory research extending over a three year period has resulted in a new method of reprocessing nitrous oxide, attaining a purity in excess of 99.5%. This is accomplished by removing the free nitrogen often present up to 5%.

It is believed this will permit using higher percentages of oxygen in nitrous oxide-oxygen anaesthesia.

We are now prepared to furnish this reprocessed 99.5% pure nitrous oxide at a price only slightly higher than that prevailing on our standard product which conforms in all particulars to U. S. P. standards.

We invite inquiries and comments.

We will be glad to show you how to test your Nitrous Oxide for its free nitrogen content

STUART OXYGEN CO.

2857 Ettie Street
OAKLAND
HIgate 0345

211 Bay Street
SAN FRANCISCO
DOuglas 5138

723 East Ninth Street
LOS ANGELES
VAndyke 8484

"*Thanks for Health*"

EXUBERANT youth scorns caution in the joy of living. Health frequently is the price of that gesture. The chief foe of youth is tuberculosis. It can be prevented and cured, yet it still is the greatest cause of death among children between 5 and 20. Thousands of adults, remembering timely aid from their local tuberculosis association, can look with gratitude at Christmas Seals and say, "Thanks for Health."

The National, State *and* Local Tuberculosis Associations *of the* United States

Buy CHRISTMAS SEALS

The Oaks Sanitarium *Los Gatos, California*

A Moderately Priced Institution for the Scientific Treatment of Tuberculosis

FOR PARTICULARS AND BOOKLET, ADDRESS THE OAKS SANITARIUM, LOS GATOS

William C. Voorsanger, M. D.
Medical Director

San Francisco Office
490 Post Street

Which Cod Fish Should Be Used for Medicinal Cod-Liver Oil?—"Zilva and Drummond were the first to draw attention to the high vitamin value of oil prepared in Newfoundland, an observation that has been repeatedly confirmed."

"The figures for the estimations of vitamin A show that . . . the Norwegian oils are the lowest, followed in increasing order by the Scottish, Icelandic and Newfoundland oils."

"The vitamin D tests also reveal the relatively high value of Newfoundland oil." "The northern fish grow more slowly than those frequenting the southern shores" (*e. g.*, Newfoundland—due probably to the warmer temperature of the Gulf Stream). — From "The Relative Values of Cod-Liver Oils from Various Sources" by J. C. Drummond and T. P. Hilditch.

Mead's Newfoundland Cod-Liver Oil and Mead's 10 D Cod-Liver Oil with Viosterol are made from Newfoundland codfish exclusively.

United States Food and Drug Administration Activities.—Seizures of more than 400 crates—32 baskets each—of wormy blueberries, and about 1,800 pounds of partially decomposed crabmeat, were initiated by the Federal Food and Drug Administration in August, according to W. G. Campbell, chief of the Administration.

The Administration caused the seizure in August of a total of 168 consignments of foods and drugs found to violate the national food and drug law, Mr. Campbell stated. The Administration sent to the Solicitor of the Department of Agriculture recommendations for prosecutions of cases involving fifty-four stocks of foods and drugs. Notification was received from federal courts of the termination of eight criminal prosecutions of violators, these resulting in fines ranging from $40 to $4,200.

Federal seizures during the month included a large number of falsely and fraudulently labeled patent medicines. These nostrums included preparations falsely recommended for appendicitis, gall-stones, Bright's disease, cancer, diseases of children, rheumatism, sinus troubles, liver and kidney diseases, neuritis, arthritis, and other maladies. Mislabeled stock "remedies" also were removed from sale. In addition to the large stocks of infested blueberries and decomposed crabmeat seized, the Administration initiated proceedings against stocks of currants, cauliflower, and apple pomace, which carried residues of poisonous chemical sprays, and stocks of butter which were misbranded as to the quantity of contents or which were adulterated in that the fat content fell below the legal requirement. Shipments of adulterated or misbranded stock feeds also were seized.

Mr. Campbell reported that the Administration took steps to remove from sale consignments of "Liberty Tonic," "Liberty Liniment," "Ru-Go Skin Remedy," "Cly-tone Tonic," and "Liberty Nerve and Gland Treatment," manufactured by the Liberty Chemical Company, Memphis, Tennessee, and shipped by Clyde Collins Chemical Company, Memphis, to a consignee in New Orleans. The goods were falsely and fraudulently labeled as being helpful in the treatment of various diseases including kidney and bladder disorders, headaches, rheumatism, eczema, chronic constipation, indigestion, etc. Some of the preparations were labeled as being "body builders."

Another August seizure initiated by the Administration covered a number of boxes of "Dr. Parker's Treatment," labeled as being therapeutically useful in the treatment of indigestion, constipation, rheumatism, heart failure, and appendicitis. This nostrum was consigned to a drug store in a West Virginia town by the Parker Medicine Company, Cincinnati, Ohio. The government alleged that "Dr. Parker's Treatment" could not be of value in the treatment of these diseases and that, therefore, the preparation was misbranded under the pure food and drug law.

(Continued on Next Page)

●

NUPERCAINE, "CIBA"
—A mighty effective anesthetic for TOPICAL APPLICATION, too!

A LOCAL ANESTHETIC OF PROLONGED ACTION

NUPERCAINE, "CIBA" is being used with most favorable results for local application in rhinolaryngology*. A 2% solution has been reported as effective as solutions of cocaine hydrochloride of from 10% to 20%.

The anesthesia from NUPERCAINE, "CIBA" is fully equal in depth and of much greater duration than that following the employment of other anesthetic agents. This fact, added to the usual absence of toxic effects, establishes the value of NUPERCAINE, "CIBA" in rhinolaryngology.

NUPERCAINE, "CIBA" is *not* a cocaine derivative; consequently, it does not come under the "Harrison Act". It is a quinoline derivative and is chemically identified as alpha butyloxycinchoninic acid diethylethylenediamide hydrochloride. NUPERCAINE, "CIBA" is known to the medical profession outside U. S. A. and Canada as Percaine, "Ciba".

NUPERCAINE, "CIBA" may be used for the induction of any form of local anesthesia, not only for surface, but also in appropriate dilutions for infiltration, caudal and spinal. **Write for literature.**

Accepted by the Council on Pharmacy and Chemistry of the American Medical Association

*Gatewood, W. L.: Laryngoscope, Dec., 1932.

SOLUTION - AMPULES **TABLETS - POWDER**

CIBA COMPANY, Inc., NEW YORK CITY

●

For use in the Prevention and Treatment of the Acid-Ash Type of

ACIDOSIS

California Lima Bean FLOUR!

Alkalinity, of course, neutralizes *acidity*. And Limas are one of the most alkaline foods known—41.65 per 100 grams!

To meet a definite demand from the medical profession, we have developed, to a high degree of fineness, a Lima Bean FLOUR—for making non-acid breads, muffins, pancakes and waffles for Basic Diet menus!

Lima FLOUR— is available in 10-lb. bags at $1.20, and in 100-lb. bags at $10.00. Upon receipt of price and delivery instructions your order will be shipped parcel post or express collect. Send orders, and make check or money order payable to—

CALIFORNIA LIMA BEAN
GROWERS ASSOCIATION
Oxnard, California

(Continued from Preceding Page)

The Food and Drug Administration also instituted seizure proceedings during the month against several consignments of Ergot Apiol Capsules, consigned by Blackman and Blackman, Inc., New York, to consignees in West New York, N. J., andWilkes-Barre, Pennsylvania, and by the American Pharmaceutical Company, New York (through the Biddle Purchasing Agency in the same city), to Wilkes-Barre, Pennsylvania. The capsules were labeled for the treatment of menstrual disorders and other female troubles. The government held that the preparations were labeled with false remedial claims for disease.

Criminal prosecutions terminated during the month, or for which the Administration received notification of termination, resulted in fines against the following companies:

Grocers' Specialty Company, Los Angeles, California. A fine of $4,200 was imposed, based upon forty-two counts, but sentence was suspended. The company shipped adulterated and misbranded strawberry, loganberry, and raspberry jams and jellies. The quantity-of-contents statements, which the pure food law requires on labels of packaged foods shipped interstate, were, in some cases, misleading. The jellies were artificially colored imitations, not labeled as imitations, nor was the presence of artificial color declared upon the labels. The jam-like products shipped by the concern were either deficient in fruit or contained undeclared artificial color which served to conceal inferiority of the food. They were imitations and not labeled as such. The foods, which previously had been seized, were billed to consignees in Arizona.

Whittier Walnut Packing Company, Whittier, California, $50 and costs. The company violated the pure food and drug law in shipping adulterated walnuts interstate. About one-fifth of the nuts were so bad as to class as "rejects." The costs amounted to $674.30. Consignments of the food had previously been seized. The walnuts were billed to a city in Nebraska.

(Continued on Page 28)

A Business HYPODERMIC

THE revival of business is largely dependent upon forward-looking business men with faith and vision. Lack of confidence, reflected by curtailment of advertising and printed matter, is easily sensed by the buying public. Business men no longer can lay the onus to the consumer—it is up to them to lead the way.

Having determined that printed matter is a much needed Business Hypodermic, the buyer should check up his printing connections. There are only three general considerations to weigh in this regard: GOOD PRINTING — PROMPT DELIVERY — FAIR PRICES!

When these requirements are fulfilled, the buyer is getting SERVICE—the kind of service which has placed The James H. Barry Company among the leaders of the Printing Craft in San Francisco. This position has been attained by being constantly alert to the requirements of the buyers of printing for over a period of fifty years.

Although specializing in publication, book and catalog printing, we are daily producing some of the finest specimens of color printing in pamphlets, broadsides and folders.

NRA
MEMBER
U.S.
WE DO OUR PART

Our customers are our best salesmen!

THE JAMES H. BARRY CO.

ESTABLISHED 1879

1122-24 Mission Street
San Francisco

FRENCH HOSPITAL • Geary Street and Fifth Avenue
SAN FRANCISCO, CALIFORNIA

HENRI J. BAZERQUE, *President*
V. LABRUCHERIE, *Superintendent*
ALBERT AUBERT, *Secretary*
ELSIE E. MITCHELL, R. N., *Supt., School of Nursing*

A general hospital of 225 beds operating an accredited school of nursing, admitting all classes of patients except those suffering from mental diseases. Organized in 1851 and is operated by the French Mutual Benevolent Society, through a Board of Directors, a chief executive officer and staff. Accredited for intern training by the American Medical Association and approved by the American College of Surgeons

MEDICAL STAFF

Medicine
A. N. FREGEAU, M. D., Chief
E. S. KILGORE, M. D., Consultant in General Medicine
THOMAS G. INMAN, M. D., Consultant in Neuropsychiatry
MARK GERSTLE, JR., M. D., Consultant in Neurology
ERNEST D. CHIPMAN, M. D., Consultant in Dermatology
JAY JACOBS, M. D., Consultant in Dermatology
CABOT BROWN, M. D., Consultant in Lung Diseases

Urology
A. H. McNULTY, M. D.
ALVIN E. CERF, M. D.
SAMUEL A. GOLDMAN, M. D.

Radiology
LLOYD B. CROW, M. D.

Surgery
ASA W. COLLINS, M. D., F.A.C.S., Chief
HAROLD M. GILFILLAN, M. D., Assistant
CARL L. HOAG, M.D., F.A.C.S., Associate
E. B. TOWNE, M. D., Consultant in Neurological Surgery
EDMUND J. MORRISSEY, M. D., Consultant in Neurological Surgery
GEORGE WARREN PIERCE, M. D., Consultant in Plastic Surgery
W. L. ROGERS, M.D., Consultant in Lung Surgery

House-Visiting Department
COLEMAN A. BLOCK, M. D.
LOUIS D. RONCOVIERI, M. D.

Pediatrics
BRADFORD F. DEARING, M. D.

Anesthesia
HERMAN MARCUS, M. D., Chief
ELLIS D. HARMON, M. D.

Orthopedics
ALFRED RONCOVIERI, M. D.
FRANK A. LOWE, M. D.
RALPH SOTO-HALL, M. D., Consultant

Ophthalmology and Oto-Laryngology
E. C. FABRE-RAJOTTE, M.D., Chief
VICTOR D'ERCOLE, M. D., Assistant

Obstetrics and Gynecology
W. J. HAWKINS, M. D., F. A. C. S.
R. F. GRANT, M. D.
J. K. PLINCZ, M. D.
CHESTER L. COOLEY, M. D.

Pathology
MARION H. LIPPMAN, M.D., Director Clinical and Pathological Laboratory
DAVID A. WOOD, M.D., Pathologist

QUALITY SERVICE DEPENDABILITY

DIEDERICH OPTICAL COMPANY, INC.
WHOLESALE AND MANUFACTURING OPTICIANS

OCULISTS' PRESCRIPTIONS FILLED

The prescription service we offer is backed by our name, which has been attained by doing high grade work for many years.

649 SOUTH OLIVE STREET LOS ANGELES, CALIFORNIA

(Continued from Page 26)

Andrew Harvey Pepall, who once traded as the Fairview Fruit Packing Company, Los Angeles, California, $200. The violation in this case consisted in interstate shipment of dried figs which were wormy and partially decomposed. The figs were consigned to Albuquerque, New Mexico, and Drexel, Pennsylvania.

Western Meat Company, South San Francisco, California, $200. The company's offense was shipping underweight butter in cartons to Honolulu.

Joseph Sunn and James Loo, co-partners, trading as Majesty Paste Company, San Francisco, California, $40. The firm shipped adulterated noodles to Spokane. The noodles were artificially colored to imitate egg noodles. The government had previously seized the goods.

Allied Fruit and Extract Company, Inc., New York City, $50. This concern violated the pure food and drug law on ten counts, sentence being suspended by the court on all but the first count. The company shipped stocks of crushed fruits and fruit sirups, which were both adulterated and misbranded. Some of the fruit sirups were adulterated with an artificially colored and flavored product, containing undeclared acid, which had been substituted for concentrated fountain sirup. The labels were misleading.

Choctaw Cotton Oil Company, Ada, Oklahoma, $100. This concern, which is in the hands of a receiver, shipped to Overbrook and Alna, Kansas, consignments of misbranded cottonseed screenings. The "guaranteed analysis" was untruthful in overstating the protein content.

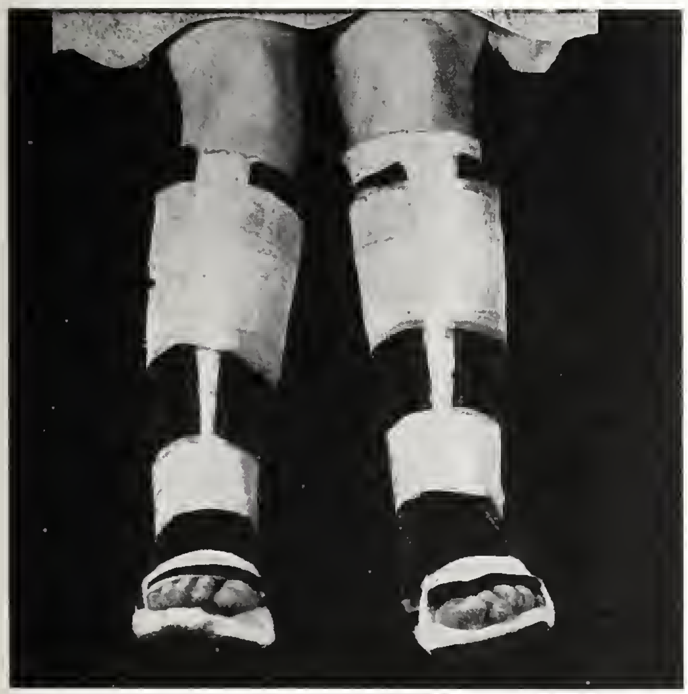
Charles Killgore, New York, New York, $100 on count one and suspended sentence on nine additional counts. Killgore consigned to Danbury, Norwalk, and New Britain, Connecticut, and Greenfield, Massachu-

(Continued on Page 30)

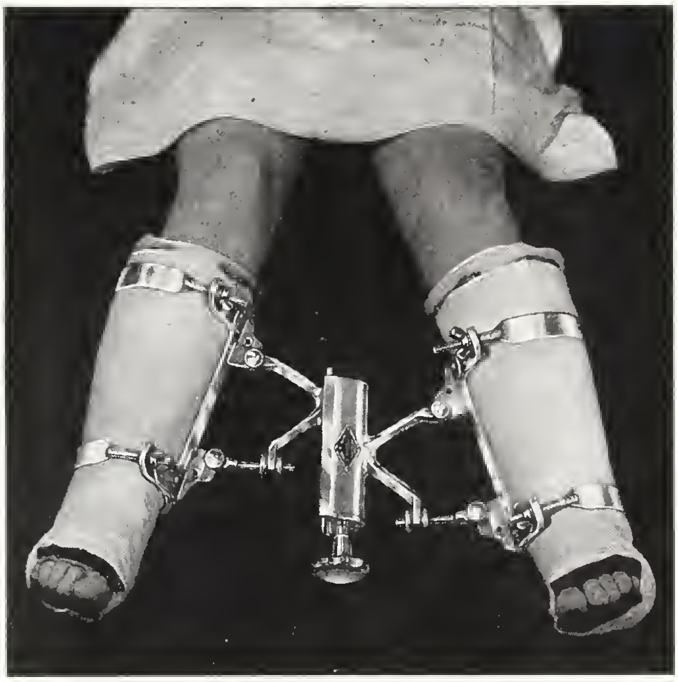
The Carl P. Jones TRACTION SPLINT

For the Treatment of Intra-Capsular and Inter-Trochanteric Fractures of the Femur and Fractures of the Pelvis

HOW THE TRACTION SPLINT IS APPLIED



Plaster boots are applied to each lower extremity, extending from the toes to a point just below the knee. The feet, ankles and legs are protected with liberally applied sheet cotton. Extra padding is applied as shown, over the dorsum of the foot, the os calcis posteriorly and the upper leg.



After allowing the casts to thoroughly harden, the splint is applied and held firmly in place by means of four adjustable steel bands. Traction is applied by turning the central threaded bar in a clockwise direction. Traction as an active force stops when reduction is accomplished.

Burden to Physician, Patient and Nurses Lessened

Experience in the use of the Carl P. Jones Traction Splint justifies the following conclusions:

1. Reduction of the fragments in INTRA-CAPSULAR AND INTER-TROCHANTERIC FRACTURES OF THE FEMUR AND PELVIS approaches nearer to normal anatomical relations than can be secured by any other method.
2. No anaesthetic is necessary in the application of the splint or during the reduction.
3. Use of the operating room is unnecessary.
4. The patient is afforded a hitherto unknown freedom of movement during the period of healing.
5. Hospitalization is not essentially necessary.
6. Marked stiffening of the knee does not follow its use.
7. Bony union and a weight bearing useful leg are more frequently secured than has been thought possible to follow fracture of the hip.
8. Pneumonia and cardiac upsets are reduced to a minimum.
9. The demand upon the surgeon's and nurses' time, both in its application and after care, is nominal.
10. It can be successfully used by men of limited experience.

Made of
Dural Metal
Stainless
Indestructible
Reasonably Priced

U. S. Patents Nos.
1829902 — 1843333
1885448
Also patented in
foreign countries

We will gladly demonstrate the application of this Splint on request.

FOR FURTHER INFORMATION REGARDING CARL P. JONES TRACTION SPLINT

Phone or write your surgical supply house, or

The Alex Martin Manufacturing Co., Ltd.

201 East Eleventh Street *GLencourt 8032* Oakland, California

CALSO WATER

Palatable ALKALINE *Sparkling*

NOT A LAXATIVE

Calso Water: An efficient method of supplying the normal ALKALINE SALTS for counteracting ACIDOSIS.

Calso Water: Made of distilled water and the ALKALINE SALTS (C. P.) normally present in the healthy body.

Calso Water: Counteracts and prevents ACIDOSIS, maintains the ALKALINE RESERVE.

The Calso Company

524 Gough Street San Francisco

Transportation Bldg. Los Angeles

A FEW CHOICE LOCATIONS AVAILABLE

AT A REDUCED RENTAL SCHEDULE

APPLY TO
CHAS. W. SMITH
BUILDING MANAGER
ROOM 415 450 SUTTER STREET
Telephone GARFIELD 7221

FOUR FIFTY SUTTER

Ten Acres of Beautiful Grounds

COMPTON SANITARIUM and LAS CAMPANAS HOSPITAL
COMPTON, CALIF.

30 minutes from Los Angeles. 130 beds for neuropsychiatric patients. 40 beds for medical-surgical patients. Clinical studies by experienced psychiatrists. X-ray and clinical laboratories. Hydrotherapy. Occupational therapy. Ten acres landscaped garden. Tennis. Baseball. Motion pictures. Scientifically sound-proofed rooms for psychotic patients. Accommodations ranging from ward beds to private cottages.

GLENN MYERS, M. D., *Medical Director*
Philip J. Cunnane, M. D. G. Creswell Burns, M. D.
Helen Rislow Burns, M. D.
Office: 1052 West 6th Street, Los Angeles

(Continued from Page 28)

setts, stocks of medicinal preparations which were below standard, and which were labeled with false and misleading statements.

The NRA and Nursing.—The board of directors of the American Nurses' Association at its regular meeting held in New York on August 25 and 26, 1933, voted to issue the following statement relative to the National Recovery Act and its implications for the nursing profession:

APPLICATION OF THE NATIONAL RECOVERY ACT TO THE NURSING PROFESSION

Successive communications from the office of the National Recovery Administrator, in response to inquiries from the American Nurses' Association, have brought out the following points with reference to:

1. Nurses. The President's Reëmployment Agreement, otherwise known as the Blanket Code, does not apply to nurses, as illustrated in the following quotation from it: " . . . shall not apply to professional persons employed in their profession." (July 27, 1933.)

2. Hospitals. All hospital employees have been exempt from code provisions; however, hospitals, public health nursing agencies, and any other group may sign the President's Reëmployment Agreement in coöperation with the National Recovery Act. This agreement applies to the nonprofessional groups employed by these agencies. (August 17, 1933.)

3. Nurses' registries. From legal interpretation of the Blanket Code, it does not appear that agencies placing nurses could bring the nurses so placed under code provisions, since these nurses would be acting in a professional capacity, and would be employed

(Continued in Back Advertising Section, Page 34)

The Greatest Mother In Time of Disaster

THE Disaster relief service, like the other services of the Red Cross, is maintained through the memberships of the American people, pledged during the annual Roll Call from Armistice Day to Thanksgiving.

The Red Cross never pauperizes. Like a good neighbor, it extends a helping hand and lends a sympathetic ear. Before it leaves the scene of devastation, the Greatest Mother has housed, fed and clothed every victim left destitute, rehabilitated every family, found a home for every orphan and provided medical and nursing care for every injured victim.

Fifty-two years of experience in dealing with disasters of every type have won for her the status of the greatest disaster-relief agency in the world. Nationally authorized by the terms of her charter to maintain this rôle, it has met, undismayed and with unfailing adequacy, the almost overwhelming demands of such staggering national disasters as the great Mississippi floods of 1927; the success droughts of 1930-31, and, during the recent depression, the nation-wide unemployment crisis when she distributed bread and clothing to no less than 25,000,000 individuals.

During the past year there has averaged a disaster every five and one-half days—92 in the United States and its possessions. Beginning with the Long Beach earthquake in Southern California March 10, and ending the middle of [illegible]ly, disasters struck in 139 counties in 21 states. [illegible] of the states were stricken three or more times [illegible] that space of time.

Prolonged Antiseptic Action *in the* Urinary Tract

ACCEPTED
AMERICAN MEDICAL ASSN
Council on Pharmacy and Chemistry

IN acute inflammation of the bladder, posterior urethra, and genito-urinary tract—where there is pain, tenesmus, and frequent urination—one of the best internal medication adjuvants is the active principle of sandalwood oil—*santalol.*

By charging the urine with santalol, the entire mucosa of the bladder and posterior urethra is constantly being laved with a soothing, reducing, and antiseptic fluid.

This is exactly what takes place when you administer

ARHEOL (Astier)

For Arheol (Astier) is the purified active principle of sandalwood oil, containing never less than 98% of santalol. It is free of the therapeutically inert but irritating substances found in ordinary sandalwood oil.

In the acute stages of *Gonorrhea,* Arheol (Astier) alleviates pain, reduces inflammation, lessens involvement of the posterior urethra, diminishes the frequency of urination. When local treatment is indicated, it acts as a useful adjuvant to treatment with local antiseptics and astringents. It may be used to advantage in *Cystitis, Vesical Catarrh, Prostatitis, Posterior Urethritis.* In *Pyelitis* and *Pyelonephritis,* owing to its dependable urinary antiseptic properties, Arheol (Astier) is a definite aid in overcoming infection in the kidney and renal pelvis.

Write for information and sample

Gallia Laboratories, Inc.
450 Seventh Avenue, New York

*

ELI LILLY AND COMPANY

FOUNDED 1876

Makers of Medicinal Products

AMYTAL

for Sedation and Hypnosis

(ISO-AMYL ETHYL BARBITURIC ACID)

In nervousness or insomnia due to arterial hypertension, mental worry, psychosis, fatigue, narcotic addiction or withdrawal, alcoholism, and in many other conditions where rest is needed. Amytal augments the action of analgesics such as amidopyrine, acetphenetidin, and acetylsalicylic acid.

Supplied through the drug trade in 1½-grain (0.1 Gm.) and in ¾-grain (0.05 Gm.) tablets.

PROMPT ATTENTION GIVEN TO PROFESSIONAL INQUIRIES

PRINCIPAL OFFICES AND LABORATORIES, INDIANAPOLIS, INDIANA

CALIFORNIA
AND
WESTERN MEDICINE

Owned and Published Monthly by the California Medical Association
Four Fifty Sutter, Room 2004, San Francisco
ACCREDITED REPRESENTATIVE OF THE CALIFORNIA AND NEVADA MEDICAL ASSOCIATIONS

VOLUME XXXIX NOVEMBER, 1933 No. 5

CARE OF THE INDIGENT AND SEMI-INDIGENT SICK*

A REPORT ON THE ALAMEDA COUNTY PLAN

By George G. Reinle, M. D.
Oakland

In May of this year, at the annual session of the California Medical Association, I had the pleasure of outlining the Alameda County plan for the care of the indigent sick. I now bring to you a report of the progress of that plan to date.

NATURE OF THE PROBLEM

The problem we faced was threefold: To provide adequate, efficient and satisfactory medical care

1. To indigent citizens;
2. To individuals who, by reason of reduced income, were unable to meet their medical obligations on a normal basis; and
3. To individuals able so to fulfill such obligations.

While it was felt that this was a task to be undertaken by organized medicine, the fact was recognized that no such plan could succeed without the whole-hearted support of the county and municipal authorities. In Alameda County this meant, first of all, the coöperation of the Alameda County Institutions Commission, which organization has full control over all county institutions for the care of the indigent sick, including clinics, which are wholly supported by county funds. This support was emphatically given on August 23, 1932, with the passage by the county supervisors of an ordinance withdrawing county support from clinics for all but the indigent.

ALAMEDA COUNTY DEFINITION OF "INDIGENT"

The county institutions, directed by Dr. Benjamin W. Black, medical director of Alameda County, were adequately prepared to take care of the indigent. "Indigent," as defined in Alameda County, has been approved by the District Attorney and the Attorney-General. Our definition states that "An indigent is a resident of Alameda County who acquires a type of medical care and treatment which requires his admission to a clinic or hospital operated by Alameda County, or who is not ambulatory and may be treated by a county physician in his home and who is unable to pay for such care and treatment from assets in hand or from assets in the hands of responsible relatives."

As for the person of ample means, it is unnecessary to state that adequate medical care is available now as heretofore; but it should be pointed out that much more is available for his money than ever before.

CARE OF THE SEMI-INDIGENT

We now have left for consideration that large middle class, whose economic status has been sharply reduced in recent years through no fault of their own. The Alameda County Medical Association undertook to provide for this class of persons on a part-pay basis. I shall not undertake to set forth in detail the set-up of the Alameda County plan, but there are certain essential features which should be touched upon.

In the first place, the members of the Alameda County Medical Association went on record as being willing to assume the obligation of caring for these middle-class patients. All applications for medical aid are received by social service workers at the county clinics; and then these applications are referred to members of the county association whose names are selected in rotation, and also according to geographical location and the kind of service required.

WHAT ALAMEDA COUNTY HAS ACCOMPLISHED

This is what we have accomplished:

A report from the Alameda County clinics for the period from December, 1932 to August, 1933 inclusive, shows eligibility investigations totaling 25,653, and references to private physicians 1,317. References to private physicians in December were 73. In the following months the numbers ran 125, 151, 170, 140, 137, 152, 173, and 197.

These, I believe, are significant figures. They show that during those nine months 1,317 persons applied for medical aid who were able to pay to some extent the cost of that aid. It is an interesting fact—and this statement is based on reports of our physicians—that a large majority of these people were glad to have been lifted out of the indigent class by means of the Alameda County plan.

---

* Read before the Harbor Branch of the Los Angeles County Medical Association, Long Beach, September 29, 1933.

Ed. Note.—See also editorial comments, page 343.

As every member of this audience knows, many of these part-pay patients are substantial American citizens who shrink from accepting charity. We have thus accomplished three important things:

1. Enabled these people to maintain their self-respect and at the same time to receive the medical care to which they are entitled;

2. Brought to the physician patients who would otherwise have been lost to him; and

3. Removed a load from the already overburdened taxpayer.

I should here interpolate an explanation of the term "part pay." The physician to whom a case has been assigned determines the economic status of his patient and fixes the charge accordingly, whether it be 50 cents, $1, or more. He collects the fee at the time the service is rendered, and thus the "part pay" becomes "full pay."

FULL COÖPERATION NECESSARY

Necessarily the fulfillment of this plan requires the utmost coöperation of the various clinics. Where an individual applies to a recognized charitable agency and he is not known to the agency, the call is referred to a physician in the same manner through the Central Social Service Agency.

If the physician who has been sent on the case can work out the financial problem with the patient, the case then becomes a part of his own private practice. If he determines it to be an indigent case, he may refer the patient to the clinic operated by the county, a hospital operated by the county for charity cases, and/or the county physician paid by the county to care for indigent cases. In each case the doctor makes out a report describing the social status of the patient and indicating the disposition of the case.

SPECIAL PROVISIONS

The problem of obstetrical cases was solved by the formation of a component group, the members of which will accept any case referred to it by the social service at a reduced fee. Fees collected from such cases are deposited in a central fund which, after the visiting nurses are paid, is divided equally among the members.

Pathological laboratories coöperate on a reduced fee basis. If the specimen is sent to the laboratory, one-fourth of the regular fee is charged. If it is necessary for a laboratory representative to call at the home of the patient, one-half of the regular fee is charged.

X-ray laboratories perform the service required at 25 per cent less than their established rate. Members of the Alameda County Pharmaceutical Association dispense standard drugs at low prices to part-pay patients.

OTHER WORK IN PROSPECT

Three units of the Alameda County plan are not yet completed. These are: hospitalization, credit rating, and preventive medicine.

Hospitalization.—We have organized, and will soon have in operation, the East Bay Mutual Hospitals. Sponsored by the Alameda County Medical Association, this nonprofit unit will be managed by a medical director who, in turn, will be responsible to a board of directors representing the medical association and the accredited hospitals. It is proposed to issue beneficiary certificates of membership at a nominal fee, which will entitle the holder to a certain number of days per year in any of the member hospitals.

In establishing the hospital unit, we recognize the fact that the interests of organized medicine and the hospitals are identical, and that no plan can be successful unless hospitalization is provided for. To this end a long and careful research was conducted with the aid of Dr. Walter M. Dickie, Director of Public Relations of the California Medical Association, and Mr. Hartley F. Peart, general counsel, coöperating with the council and officers of the Alameda County Association.

In formulating the hospital unit, it was agreed that unless all hospitals in good standing in a given locality are embraced within the scheme, it will not prove satisfactory in the long run. Therefore, the set-up was erected so as to provide identical conditions for member hospitals and thus eliminate the possibility of undue competition or underbidding.

We have also sought to avoid the pitfalls of the commercial clinic organized for profit. Holders of certificates will not be limited as to choice of physician or hospital, provided that the physician is a member of the county association, the hospital a member of the East Bay Mutual Hospitals, and the physician is permitted to practice in the hospital selected.

Credit Ratings.—The Retailers' Credit Association of Alameda County, a nonprofit organization, has offered credit service at nominal cost. The plan provides for the establishment of a professional credit rating bureau through which the physician-member will be enabled to obtain a credit report on any patient of whose status he is not certain. It also provides for reports on patients whose economic status may have so changed as to raise them out of the part-pay class. This unit of the Alameda County plan is still under consideration.

Preventive Medicine.—Preventive medicine, the last unit of the plan to be considered, is, I believe, of such extreme importance to the medical profession as to deserve the earnest consideration of every one of us.

"COSTS OF MEDICAL CARE"

We have heard a great deal about the "costs" of medical care, both in our medical journals and in the lay publications. I wish that I might at this moment mount a high pinnacle and shout to the people that never in the history of the world could medical care be obtained at the low cost at which it is offered today. But since I am not endowed with the powers to perform that superhuman feat, we can only trust that the people themselves will realize that such is the fact, while we (organized medicine) roll up our sleeves and begin to plow the newer field of preventive medicine.

SOME PHASES OF PREVENTIVE MEDICINE

In dealing with preventive medicine, I feel that I should seek not a pinnacle but a deep canyon, for I have nothing to shout to the world.

I beg your indulgence while I present some statistics, which I believe spring from reliable sources. Surveys have shown that in any specified time about two per cent of the population is incapacitated for work on account of sickness. Death in the United States from various diseases, not including accidents and suicides, totaled in the year 1931 more than 1,175,000.

Dublin has calculated that about one-third of the deaths which occur every year are preventable, even under present-day conditions. It is estimated that about 120,000 babies die annually from preventable conditions during the first year of life.

At the ages from twenty-five to twenty-nine, the number of deaths regarded as due to entirely preventable causes exceed 30,000 a year. The capital value of the individuals who die at these ages, based on net future earnings, amounts to $750,000,000.

Computing the value of life at each age period, Dublin has estimated that the total capital value of the lives which can be saved annually, through the application of modern preventive medicine and public health measures, is in excess of $6,000,000,000. In other words, the cost of sickness through premature mortality is more than half again as large as the cost of medical care.

It has been estimated that the cost of preventable mortality (6 billions) added to the cost of medical services (3.6 billions) and the wages lost on account of disability (from 0.25 to 0.5 billions) brings the total to about $10,000,000,000 a year, or approximately $80 per person in the population.

According to accepted estimates, $30 is expended for treatment against $1 for prevention annually in the United States.

Hence it becomes apparent that, aside from the appalling waste of human life and the attendant sorrow and despair, we are faced with an important economic factor which demands the earnest consideration of every physician.

Time and thought beyond estimate, and untold millions have been expended to prevent economic loss in industry. What, if anything, can be accomplished to end the unnecessary waste of human lives? The answer, gentlemen, rests with organized medicine, and it is, I believe, obligatory upon every county society and every member of a county society to find that answer.

Blame for the negligence in the field of preventive medicine rests not alone with the physician; the health officer has been equally, if not more, remiss. The solution lies in carefully planned coördination between health departments and county medical societies.

One of the first steps must be the instruction of physicians in the fundamentals of preventive medicine. In Detroit, Michigan, where a plan of preventive medicine was inaugurated with 1,100 physicians and the health department coöperating (and which is today operating successfully), it was discovered that there were physicians who did not know the difference between antitoxin and toxin-antitoxin. There were many who were not familiar with the Schick test. To overcome this lack of knowledge, postgraduate conferences in communicable disease control (at regular stated intervals) should be launched immediately through the health committee of the local medical society and the health department.

In addition to stimulating the interest and the coöperation of the physician we must, of course, go directly to the public in any well-laid plan for immunization. Diphtheria prevention might be chosen as the field in which to make a beginning in the program of medical participation. Our aims should be elimination of free clinics, with "every physician's office a health center.'"

A plan of preventive medicine is now being developed in Oakland with the coöperation of the Committee on Public Health of the Alameda County Medical Association and Dr. Hieronymus, the health officer.

COMMENT

This, then, brings up to date the status of the Alameda County plan, together with the three additional units which are presently to be included. I wish at this time to interpolate a word to this effect: Without the unselfish, whole-hearted and earnest coöperation of our members we could have done nothing. If any lesson is to be gained from our experience, this one is paramount: That the medical profession must march as an army, fight as an army and, therefore, serve as an army.

OTHER COUNTIES HAVE FORMED COUNTY INSTITUTIONS COMMISSIONS

It is my pleasure to report that in Santa Clara County, which is developing a new charter, the Alameda County plan will probably be adopted as the result of reports given by our members at a meeting of the Board of Freeholders, county medical society, social workers and nurses at San Jose. Sacramento County has adopted the Alameda County plan and has installed a County Institutions Commission. Riverside County, I believe, has adopted the plan in a modified way. San Diego County reports a successfully operating plan, and Los Angeles County at this time is considering a plan of medical service and hospitalization. This latter plan is a periodic payment plan providing for a lay sales department which is to receive 30 per cent of the gross income. We now have an invitation from Contra Costa County to appear before its medical profession and explain the Alameda County Plan.

IN CONCLUSION

In conclusion, gentlemen, I wish to emphasize my belief that any plan you may adopt for medical service and hospitalization for part-pay patients should, by all means, include a strong program of preventive medicine. The medical profession of your city should take the initiative in impressing the public as to the importance of preventive measures during the preschool age of children, for it is in that age-group that the greatest good can be accomplished.

If I have failed to capture your attention in my rather lengthy discourse, I beg your kindly indulgence. I believe that organized medicine should not only get into the spirit of the "New Deal," but, with banners flying, should forge to the front and lead. And I know that if I, both as an individual and in my official capacity, am able to point the way even in a small measure, my own life will have been the richer for it.

204 Dalziel Building, 532 Fifteenth Street.

SPINAL ANESTHESIA*

ITS TECHNIQUE, RECORDS, AND RESULTS

By Louis H. Maxson, M. D.
Seattle, Washington

It has been my good fortune to be able to attend the last two meetings of the Section of Anesthesiology of the California Medical Association. I have derived much pleasure and profit from them. This year your chairman has done me the honor to give me a place on the program. I have accepted the invitation with considerable diffidence because I know that there are many here whose knowledge of the subject is greater than mine. As a matter of fact, Doctor Harris' excellent paper on technique, and Doctor Waters' talk on the causes of blood pressure drop in spinal anesthesia, presented at the San Francisco meeting two years ago, gave me much of the information upon which our Harborview Hospital technique was based. Moreover, in presenting our technique for consideration, I fully realize that there are other well-established and successful ways of obtaining the same results. This one was devised to meet our particular needs of simplicity and safety, and has proved so satisfactory that we have continued with it. There is but one idea for which we can claim any originality, namely, that of controlling a simple solution of novocain crystals in spinal fluid by gravity. But even without presenting anything new it is worth while, I think, to evoke further discussion of spinal anesthesia by this group, because some of our best members still do not accept it, and I feel that it should be part of the anesthetist's equipment for his task.

WHERE THESE OBSERVATIONS WERE MADE

Harborview Hospital in Seattle is a charity hospital of 450 beds, recently built and well equipped. Our anesthetic staff is small, consisting of myself, one assistant, and an interne, who is on duty for thirty-one days. The form of anesthesia for a given case is generally chosen by the senior surgical resident, although I am consulted in special or doubtful cases. The final decision rests with the surgeon. Spinal anesthesia has been an accepted procedure since the hospital was opened in March, 1931. At first it was administered by the operating surgeon, or by the assisting resident or intern under his direction; but there was such a wide variation of technique that it was soon found advisable to have us formulate a routine procedure which an interne could easily master, and to turn the administration over to us. Simplicity and safety have been our ideals.

BRIEF HISTORY OF SPINAL ANESTHESIA

A brief history of spinal anesthesia will throw some light on the different methods of administering and controlling it. Spinal anesthesia was accidentally discovered by J. Leonard Corning of New York in 1885 in the course of experimentation upon dogs with anesthetic drugs. It was first used upon a human being in 1898 by Bier, who had the temerity to allow cocain to be injected into his own spine. Meanwhile, in 1891, Quinke had given us the technique of lumbar puncture. In October, 1899, Tait and Caglieri did an osteotomy of the tibia, and in December, 1899, Dr. Rudolph Matas injected one per cent cocain into the spinal canal and performed a hemorrhoidectomy. These were the first cases in the United States. Spinal anesthesia, however, remained a surgical curiosity.

In 1907, Barker in England, and Chaput in France, worked out the principles of gravity control technique. Barker used 10 per cent stovain, with glucose 5 per cent, sterile water 85 per cent; specific gravity, 1.0300. Chaput used stovain 10 per cent, sodium chlorid 10 per cent, sterile water 80 per cent; specific gravity, 1.0831. These solutions were both much heavier than cerebrospinal fluid, which has a specific gravity of from 1.004 to 1.007. They were able to control these heavy solutions by gravity. Their principles were absolutely correct, but the method was not generally understood or adopted, for neither glucose nor salt in such concentration is desirable in the spinal canal.

In 1908, Jonnesco presented his method of high or low spinal puncture with the injection of a stovain and strychnin solution. His tour of this country in 1910 (I saw him demonstrate at the University of Pennsylvania) failed to impress the profession, as many bad results were mingled with the good. His method of varying the height of anesthesia by spinal puncture in different interspaces is still one of the recognized methods of varying the anesthetic level, although his high anesthesia is outlawed as too dangerous.

Later Le Filliatre, in France, devised a barbotage technique, and added this much-misunderstood term to spinal anesthesia nomenclature. He disseminated his anesthetic drug in from 10 to 20 cubic centimeters of spinal fluid, and was thereby enabled to produce anesthesia to the neck. His principles, somewhat modified, have been retained by the French school, and form the basis of the volumetric method of control.

About 1912, Wayne Babcock, who has for a generation been one of the successful exponents of spinal anesthesia, devised a solution of stovain in distilled water, with lactic acid to acidify it, alcohol to make it lighter than spinal fluid, and strychnin to fortify the spinal cord. This solution attained some popularity. It depended for effectiveness upon dispersion in the spinal fluid. I used it a few times in 1915, but I must admit that I did not know much about what I was doing. Little was known by the profession at large of the principles involved in spinal anesthesia, and naturally many deaths occurred. The method was held to be unsafe and again fell into disrepute, save for a few pioneer souls who went on perfecting the technique and gaining knowledge of the physiologic principles.

---

* Guest-speaker paper, read before the Anesthesiology Section of the California Medical Association at the sixty-second annual session, Del Monte, April 24-27, 1933.

DRUGS USED IN SPINAL ANESTHESIA

Many drugs have been tried for spinal anesthesia, but all proved unsatisfactory in some particulars until the advent of novocain. About 1920, Doctor Gaston Labat worked out the method he has used and taught successfully ever since. He uses neocain (French novocain) crystals dissolved in spinal fluid, and disperses it by barbotage to the desired level. He insists upon Trendelenburg position as a protection against cerebral anemia. He has a large following all over the country.

It remained, however, for George P. Pitkin to give spinal anesthesia the impetus which has reestablished it in popularity and usefulness during the past five years. After careful and numerous animal experiments, he devised a novocain solution in a special medium which was given the rather unscientific name of spinocain, and a technique for controlling its action. This solution, as you all know, consists of novocain, sterile water, alcohol and a starch, amyloprolamin. It is lighter than spinal fluid. It depends upon dispersion plus gravity control. A carefully worked-out technique is given for reaching the desired levels. It is the logical method for cases that must be put into deep Trendelenburg position for operative convenience.

The method described by Harris at the convention two years ago was one of volumetric control, not obtained by barbotage but by simple withdrawal and reinjection of the desired quantity of spinal fluid, after dissolving in it a dose of novocain proportional to the length of effect desired.

FACTORS WHICH INFLUENCE SPINAL ANESTHESIA

Practically every authority differs in some detail from the others. The reason for this is apparent when one considers the many variable factors which may influence spinal anesthesia. I shall name some of them without further comment:

1. Position of the patient during puncture.
2. Interspace chosen.
3. Volume of fluid withdrawn.
4. Dose of drug.
5. Resultant concentration of solution.
6. Rate and force of injection.
7. Intradural pressure of the spinal fluid.
8. Specific gravity of solution.
9. Barbotage.
10. Position of patient after puncture.

These are the major variables, as I see them. I believe that Professor Waters said that there were fifteen. At any rate, any one of them can influence the result. Is it any wonder, then, that different men have different methods? With this explanation, I shall briefly present the method that we use, and our reasons for each step, expecting to encounter differences of opinion regarding them all.

HARBORVIEW HOSPITAL GRAVITY CONTROL TECHNIQUE

General Rules for Safety.

1. Spinal Anesthesia is not to be used for operations above the diaphragm, nor for those expected to take more than two hours. (Nitrous oxid and oxygen may be used if the operation is unduly prolonged.)

2. Novocain crystals, dissolved in spinal fluid, to be the anesthetic agent. Maximum dose, 200 milligrams.

Comment.—While high anesthesia, and even total anesthesia, is possible by the spinal route, as shown by Vehrs of Portland, and others, it has an inherent high mortality which we are not justified in incurring. But spinal anesthesia, limited to the diaphragm and below, has a comparatively negligible mortality. It is the spinal anesthesias that "get away" which cause alarming symptoms and death.

Cocain, tropococain, stovain, apothesin, butyn, and other drugs have been tried and discarded, one by one, until today novocain (the German product) or neocain (the French) in pure crystalline form have the field to themselves. American-made procain seems not so reliable. Nupercain and pantocain are not yet established.

The cerebrospinal tract is so intolerant of drugs and foreign substances in general (even normal saline solution being irritant) that it seems unwise to introduce any foreign substance—such as alcohol, strychnine, starch paste, lactic acid, glucose, or salt—other than the anesthetic drug itself.

ZONES

For the sake of simplicity, we use but two zones.

1. To the umbilicus: For genito-urinary cases, gynecology, appendectomy, orthopedic work in the legs, herniotomy, etc.

2. To the costal margin or diaphragm: For gall-bladder and stomach surgery, general exploration, intestinal obstruction, etc.

Comment.—It seemed unnecessary to attempt the fine differentiation into smaller zones, especially as our safety rules kept us with the diaphragm as our upper limit. As experience is gained, we do attempt to limit anesthesia to the perineum, for example, or to the perineum and legs, and for kidney cases to carry it higher on the side to be operated on; but these are refinements of the method which must wait on experience with it. We do not expect our interns to do these things on their second day of service, but we do expect them to carry out the general instructions from that time on.

DOSAGE

For the same reason we use, as a rule, but two dosages.

1. One hundred milligrams for operations of forty-five minutes or less, limited to zone 1.
2. Two hundred milligrams for longer operations, and for zone 2.

Comment.—We vary the dosage occasionally, but for major work generally give the full dose of 200 milligrams. We have proved that this dose can be given routinely without harmful effect, unless there is an idiosyncrasy to novocain. For rectal work we have given as little as 50 milligrams. For upper abdominal work in robust individuals, we have five times given 300 milligrams.

PRELIMINARY MEDICATION

The patient receives the usual preoperative medication.

1. A barbiturate (generally sodium amytal) the evening before, and also early in the morning of operation.
2. Morphin and atropin in suitable doses, one hour before operation.

Comment.—Spinal anesthesia can be successfully administered without this preliminary medication, but the patient is in better condition mentally and physically with it. We do not fear a summation effect upon respiration, circulation, or blood pressure. We agree with McKesson that holding pulse, respiration, and blood pressure at or below normal is for the patient's best interest—a state of artificial hibernation, he calls it.

POSITION

Sitting sidewise on operating table; back bowed; patient supported, "nose to knees."

Comment.—We use the lateral position whenever the patient is too ill or too crippled to sit up, but find the puncture more easily made in the sitting posture. Moreover, the upright position is the logical one when using a heavier than spinal fluid solution.

PREPARATION

Tincture of iodin, half strength.

POINT OF INJECTION

The fourth lumbar interspace, or the first feasible interspace above it.

Comment.—We avoid high injections for many reasons, but chiefly because their results cannot be accurately predicted, and the resultant anesthesia may go too high. The fourth lumbar interspace is most easily located. It leads into a relatively large well of spinal fluid. It is below the end of the spinal cord, thus avoiding possible permanent injury to that structure. While the needle often touches a nerve of the cauda equina, as manifested by a sudden twinge in one leg, experiment has proved that it cannot pierce it at this level.

VASOMOTOR STIMULATION

None.

Comment. — We formerly used ephedrin sulphate, grain one-half hypodermically, given at the time the lumbar puncture was started; that is, about five minutes before the novocain was injected. This often caused a slight *rise* of blood pressure before the spinal anesthesia became effective. For the past six months or more, on the strength of Labat's argument, we have omitted it, and find that our patients apparently get along as well. Should there be collapse during the anesthesia, we would use first of all artificial respiration, then epinephrin or coramin, or both, as inhalation. Mouth to mouth insufflation is sometimes necessary.

ARMAMENTARIUM

1. Syringes: A two cubic centimeter and a ten cubic centimeter Luer syringe.
2. Needles: A very fine, one-half inch needle for the first skin wheal. A one and one-half inch needle for deeper injection of the tissues. Two spinal needles, gauge 20, short bevel. A Wassermann needle for mixing.
3. A pointed Bard-Parker blade to nick the skin.
4. A 200 milligram ampoule of novocain crystals.
5. A file.
6. Tincture of iodin, 3½ per cent, sufficient quantity.
7. Novocain solution, one-half of one per cent, sufficient quantity.
8. Sterile gloves.

Comment.—The superiority of the small-gauge, short-bevel spinal needle over the old Bier type needs no emphasis. The blade for nicking the skin makes for neater work.

LUMBAR PUNCTURE

1. Paint back with tincture of iodin.
2. Locate fourth lumbar interspace. Mark injection point with thumb nail.
3. Fill two cubic centimeter syringe with novocain solution. Attach small needle. Make skin wheal at point marked. Withdraw needle. Reinsert to full depth and infiltrate one cubic centimeter.
4. With longer needle, infiltrate interspinous ligament and tissues around foramen.
5. Nick skin with knife point.
6. Insert spinal needle at right angles to skin, bevel parallel to axis of spine, until dura is penetrated and spinal fluid flows freely. Replace stylet.

Comment.—Lumbar puncture should be painless except for the first needle-prick. It is more easily described than done neatly, but facility is soon acquired. Even the experienced man, however, will occasionally have difficulty. The oblique approach often helps in hard cases.

INJECTION

1. Break neck of ampoule.
2. Withdraw stylet and allow four cubic centimeters of spinal fluid to drop into ampoule. Replace stylet.
3. With the Wassermann needle on ten cubic centimeter syringe, dissolve novocain crystals by barbotage. Detach Wassermann needle.
4. Withdraw stylet. Attach ten cubic centimeter syringe and inject novocain-spinal fluid solution at uniform rate: one cubic centimeter in five seconds. Withdraw spinal needle.

Comment.—A constant amount of four cubic centimeters is withdrawn. This, with two hundred milligrams of novocain, makes a five per cent solution, with a specific gravity .008 higher than spinal fluid alone. It is this small difference, however, that makes gravity control possible, as proved experimentally and clinically. The slow, uniform rate of injection gives a slight, but practically uniform amount of dispersion in the fluid in the canal. This amount of dispersion will carry anesthesia to the umbilicus, unless modified by position of patient.

FOR ZONE 1

1. Place patient on back, or in required surgical position, *not in Trendelenburg* position. Support head and shoulders with pillow. Proceed with preparation.
2. Test level of anesthesia with pin or hemostat. If satisfactory, operate. If too low, lower head five degrees, and wait until satisfactory level is reached, then level table.

FOR ZONE 2

1. Proceed as before, but lower head of table 5 to 10 degrees. Prepare patient.
2. Test level of anesthesia from time to time. When high enough, level table and operate.

Comment. — Trendelenburg position, if continued with this method, will carry anesthesia too high. Therefore, do not use it as a routine. If deep Trendelenburg is required for the operation, wait at least ten minutes, or modify the technique by using twice the amount of spinal fluid, thus producing a 2½ per cent solution of specific gravity 1.008; .004 higher than spinal fluid alone.

GENERAL SUGGESTIONS

1. Handle patients gently.
2. Handle needles by the hub, not by the point or shaft.
3. Avoid loss of spinal fluid.
4. Keep track of blood pressure at appropriate intervals throughout anesthesia.

Comment. — With experience the five-minute blood pressure readings may safely be omitted. As shown by Bowers, respiratory distress is the thing to watch for. Watch the patient's color and respiration; feel the skin for temperature and dryness. These will sufficiently indicate the patient's condition to the experienced man.

This technique is given in detail, just as we teach it to our interns. It may be noted that the instructions are very definite: a standard posture; a definite place for the puncture; a definite amount of spinal fluid; a definite dose of the drug; and a definite rate of injection. This, we believe, makes for uniformity of results. It can be used without modification for over 90 per cent of the cases.

EXCEPTIONS

This technique, unmodified, is not suitable for cases requiring extreme Trendelenburg. Such are suprapubic prostatectomies. The use of four cubic centimeters of five per cent solution with deep Trendelenburg will kill these old men with their sclerotic arteries and their compensatory high blood pressure; for the novocain solution will gravitate higher and higher, causing a greater and greater blood pressure drop and respiratory paralysis, resulting in a degree of shock from which they will not recover. The same physical factors obtain in certain gynecological cases, but are not as disastrous since these younger subjects stand the fall of blood pressure better. But such a drop should never be allowed to occur. Pitkin's spinocain is excellent for these cases, or one may use a 2 or a 2½ per cent solution, which does not gravitate so far nor so fast.

RECORDS

The standardization of hospitals about a decade ago brought about the glorification of the written record. Among others, came the standard "safety first" anesthesia record sheet sponsored by the National Anesthesia Research Society, which has been widely adopted. Records became a sort of fetish, and anyone who did not fall in line was a hopeless mossback. But as a matter of fact, most of us had devised and used anesthesia records long before they were popularized, and we know well their virtues and their shortcomings. I find that comparatively few of the best anesthetists meticulously keep the five-minute record which the standard chart calls for. Instead they record essential data, and state on the chart their general impression of the patient's condition and the difficulties, if any, which have been encountered. For you all know that it is mechanically impossible to administer the anesthetic in certain cases and keep records at the same time, unless, indeed, as has been suggested, the anesthetist should grow four hands and a prehensile tail! Where everything is going smoothly the record can be kept, but in time of trouble, when data would be most valuable, it is impossible to obtain them. A faked record—one in which the gaps are filled in by guess—is much worse than an empty one. I have noticed that the best-looking records are often turned in by the least competent anesthetists. "Intellectual honesty" should be upheld even at the cost of appearances.

However, when we want to find out something, nothing takes the place of records. At the outset our knowledge of spinal anesthesia and its results was practically nil, and we wanted to learn as rapidly as we could. We found that the Standard anesthesia sheet was not well adapted to recording the technique and phenomena of spinal anesthesia. Accordingly we devised a special record form on which these things could be put down. We have 477 of these records—some of them incomplete—and they furnish a rather indisputable array of facts. As someone has said ,"Facts are stubborn things." Our total experience at the Harborview Hospital now comprises over 1,700 cases. It is upon the facts shown by these case records, and substantiated in the rest of the series, that our conclusions are based.

CONCLUSIONS

The sheet was intended to record (1) the details of technique and (2) the results of our procedure. Tabulation of these records shows that the unmodified technique has been used in 95 per cent of the cases. Most of the modifications were for nupercain or pantocain. This argues for its general applicability. Supplementary anesthesia was used in 36 per cent of the cases. This is a high proportion, but is explained by two facts: many of our operations run well over an hour, and no attempt is made to avoid supplementary anesthesia if the patient is afraid, or feels touch or traction, or even if he just prefers to be asleep. There were 1.4 per cent of complete failures; by which I mean cases in which anesthesia either failed to develop or was of such slight intensity that pain was felt. It is the custom to ascribe these failures to faulty technique and deposit of the anesthesia solution outside of the dura. I cannot accept this explanation as adequate, for in several cases it seemed that we must be in the dural sac, as we used a short-bevel needle and had a free flow of spinal fluid. I think, rather, that there are individuals in whom usual strength solutions of novocain have little or no effect, just as there are those who are hypersensitive to novocain; for we see failures in other types of local anesthesia which can be explained on no other ground.

MORTALITY

This series of 1,700 cases contains four deaths on the table, only two of which can be considered as chargeable to spinal anesthesia.

The first of these, No. 195 of our series, an advanced intestinal obstruction case, was moribund when brought to the operating room. Twenty minutes after the spinal was given, respiration failed and the patient died. A death from advanced toxemia and shock; not an anesthetic death.

The second, No. 365, was an advanced cardiac case with ascites, in whom the novel operation of implanting the saphenous vein into the peritoneal cavity, for the purpose of draining the latter, was attempted. The patient was a heavy man, and water-logged; his heart had been progressively failing for several hours. He sat up to receive his spinal (an error of judgment, perhaps) and died five minutes after it was administered. I think his death was due to the additional strain of the sitting posture, upon a heart just about ready to stop.

The third case was more recent. This was a very sick woman, with a blood-stream pyogenic infection, and multiple abscesses in the right kidney. Pulse was 140 to 150 before operation; advisability of operation was questioned, but after examining her I felt that we should take the chance, as it was her only one. I gave her the usual dose, placed her on her right side with the head of the table lowered, then turned her over and placed her in the kidney posture. Here I made an error. With the table broken, I allowed her head to be lower than the kidney area, and I think the anesthetic advanced slowly upward, increasing her respiratory difficulty so gradually that she was gone almost before I realized it. In extenuation, it may be said that one could not detect cyanosis in the negro skin; that her heart was so feeble from the beginning that I could not follow the temporal pulse; and that she was in such a position and so covered with drapes that I could scarcely see her shallow respiration. I acknowledge this, however, as a spinal anesthetic death. A peculiar thing, and one that misled me, was that her pupils remained small, even after death. Can any of you explain this fact?

Since this paper was begun it has become necessary to add a fourth case, which occurred in the hands of one of my best interns. His report is as follows: "Male patient; forty-seven years; weight, 232 pounds. Blood pressure, 130/80; pulse, 120; temperature, 102. Spinal; 175 milligrams novocain crystals given in the third lumbar interspaces at 11:55 p. m. Patient had received pantopon, one-third grain, and ephedrin, one-half grain, preoperatively. Anesthesia to umbilicus in five minutes. Head not lowered at any time—was raised on pillow. Marked drop in blood pressure in seven minutes. Patient became cyanotic. Ephedrin, one grain, and one ampoule of coramin given. Patient was pulseless radially at 12:05 a. m. Two cubic centimeters of adrenalin given directly into heart. Carbon dioxid and oxygen given, with artificial respiration for thirty minutes. No sign of response at any time."

I am at a loss to explain this death, unless it was due to the toxicity of the novocain itself.

Honesty compels me to say that we have had other alarming cases, comparatively few in number, however, which have had a more fortunate outcome. One of these occurred recently, and is of interest from the standpoint of the toxicity of novocain. The case, one of intestinal obstruction, came in as an emergency at midnight. The intern who gave the anesthetic reported to me that the patient had collapsed shortly after the spinal was given, and that they had had to work hard to restore her. An emergency cecostomy was done. Two weeks later I gave her a spinal for a left inguinal colostomy, using the usual routine. Anesthesia came up to the umbilicus. Twenty minutes after the spinal was given, while all was apparently going well, she suddenly gasped and turned pale and respiration ceased. I could get no pulse. The usual measures were applied, the most effective being mouth-to-mouth insufflation, and after twenty minutes' work she was breathing well and her heart beating strongly. She was watched closely for hours, but had no further difficulty. One month later she was brought up for removal of the growth from the sigmoid. Twenty cubic centimeters of one-half of one per cent novocain solution was used for local infiltration, and she had a similar syncope, though not alarming. This seems to establish the case as one of extreme susceptibility to novocain. I can think of no practical way to tell these cases beforehand, as it surely is not feasible to give all patients a preliminary test injection.

SUMMARY

I have not attempted to discuss the pros and cons of spinal anesthesia as a method. Common sense should govern its use, as with other anesthetics. It is true that some bad risks can be handled better with spinal anesthesia than with any other method, but it should not be used indiscriminately nor as a last resort for all the bad cases. Otherwise it will be unfairly charged with a high mortality, which it does not deserve. We offer the Harborview Hospital technique as a means of keeping a good mortality record for spinal anesthesia, for we can honestly say that we have very few patients who show any alarming symptoms whatever. In the majority of cases the shock-like symptoms are conspicuous by their absence.

CONCLUSIONS

Our experience with spinal anesthesia given by this technique leads us to the following conclusions:

1. Gravity, or postural, control of the level of spinal anesthesia is feasible, simple, and as safe as any other method.

2. Gravity control is possible with a five per cent solution of novocain crystals in spinal fluid, without the addition of any other substance.

3. With this technique the Trendelenburg position is not only not indicated; it is definitely contraindicated, except as used to increase the height of anesthesia.

4. With this technique, the novocain is not all "fixed" by the nerve tissue in contact with it, in ten minutes, as is generally taught. It is possible to shift the level of anesthesia after fifteen or twenty minutes in most cases.

5. Untoward symptoms can be avoided by holding the upper limit of anesthesia to the costal margin.

6. Two hundred milligrams of novocain is a safe dose in anyone not having an idiosyncrasy toward it, and gives a desirable length to the anesthesia.

SUMMARY

1. Reasons for devising Harborview Hospital technique.
2. Brief history of spinal anesthesia.
3. Harborview Hospital technique presented in detail.
4. Records, and what they show.
5. Conclusions.

1409 Medical and Dental Building.

PHYSICAL THERAPY IN CALIFORNIA*

A SPECIAL COMMITTEE REPORT

A SPECIAL Committee on Physio-Therapy was appointed by the Council of the California Medical Association in September, 1932. The committee consisted of Doctors Charles L. Lowman, Howard Naffziger, Rodney F. Atsatt, H. Leslie Langnecker, and John Severy Hibben (chairman).†

SCOPE OF PROGRAM

In outlining its work, the committee decided

1. To survey the practice of physical therapy from the standpoint of:

(*a*) Education—graduate and undergraduate;

(*b*) Practice—by general practitioners, or institutions, and by unlicensed technicians.

2. To submit a report in writing of their findings, with recommendations, at the next regular meeting of the California Medical Association.

Among the reasons advanced for creating such a committee was the suggestion that many members of the medical profession do not fully understand that physical therapy agents are a part of the regular professional armamentarium in the practice of medicine and surgery; that those practicing physical therapy should have opportunities to receive ample training and postgraduate instruction, and that the instruction should be given by qualified physicians or by teaching institutions, not by salesmen of manufacturers or hired lecturers. It was recognized that while competent technicians should be used to carry out therapeutic measures, the responsibility for medical judgment in every case, from day to day, rests squarely on the shoulders of the practicing physician. Whenever a physician cannot himself intimately supervise the indicated measures, he should, of course, refer his patient to a physician trained in physical therapy, or to a hospital department under a physician's control.

QUESTIONNAIRE RESPONSES

Questionnaires were sent to all of the medical colleges, hospitals, and county medical societies in the state, with the following results:

1. Survey:

(*a*) Of the four medical colleges in California, only two offer undergraduate instruction in physical therapy.

(*b*) Questionnaires were sent to thirty-nine of the county societies of the California Medical Association, each being asked to appoint a special committee to coöperate with the state society committee. In this way, interest and attention were directed toward physical therapy, not necessarily to increase its use, but to improve the quality of work. Of the thirty-nine county medical societies, five have created special committees on physical therapy; with two the matter is pending. The San Francisco County Medical Society has had an active functioning committee which recently made a survey of physical therapy in the hospitals in San Francisco County.

(*c*) To fifty-one hospitals in California, questionnaires were sent and thirty-nine replied. In reply to the first question—Do you possess a physical therapy department?—thirty-five, or 89 per cent, answered yes, and four, or 11 per cent, answered no. To the second question—Is it under the control of a qualified physician?—thirty-five replied. Of these twenty-four, or 68 per cent, answered yes, and eleven, or 32 per cent, answered no. The committee offered its advisory services to all hospitals contemplating the establishment of a physical therapy department. The committee also suggested the presentation of papers at staff meetings in order to stimulate a better and more intelligent discussion of the value and limitations of physical therapy. Effort will be made to have manufacturers and distributors of physical therapy and x-ray equipment coöperate to discourage or do away with commercial lecture courses.

2. Educational activities:

Papers, lectures, and films have been given and shown before medical societies and hospitals as follows:

Paper—"Physical Agents in the Treatment of Pneumonia."

An educational film on "Physical Therapy." This was shown three times, with explanatory comments.

A film on "Massage" was shown before the Western Hospital Association annual convention. Corrective exercise literature was supplied by the

---

* A report submitted by a California Medical Association Committee on Physiotherapy, and read before the Council of the California Medical Association, Del Monte, April 25, 1933.

† The chairman and members of the committee wish to thank Dr. Richard Kovacs, chairman of the Committee on Physical Therapy of the New York County Medical Society, personally for his time and interest in furthering the work of the California committee.

Council on Physical Therapy of the American Medical Association.

A paper on "Progress in Physical Therapy" was read before the industrial section at the annual meeting of the California Medical Association. An educational film was also shown.

RECOMMENDATIONS

The committee recommends a program for a half-day session on physical therapy at the next annual meeting of the California Medical Association. This is not to be regarded as a request for a special section, but as a method of spreading further information among general practitioners in order to get a more rational view of the indications and limitations of physical therapeutic measures. The committee hopes presently to be able to offer to the profession free instruction on courses in physical therapy. We will have available a list of accredited institutions which offer graduate and postgraduate instruction.

PLANS FOR THE FUTURE

At the 1933 Del Monte meeting of the California Medical Association, it was considered advisable to wait until fall before starting on an active educational campaign.

Our first step will be to again contact the medical societies which have not appointed committees, and to coöperate with such committees as have been appointed. Coöperation would include:

1. Making a more detailed survey of hospitals and institutions practicing physical therapy; under whose direction the work is being carried on; qualifications of technicians and physicians; equipment; and details of any graduate or post-graduate instruction given.

2. To promote the teaching of physical therapy to graduates and undergraduates in medical schools and hospitals; to make a survey of such schools and to ascertain in writing their curriculum requirements for admission, the number of students graduated each year and whether or not diplomas are given; and to secure the coöperation of manufacturers and distributors, in an effort to do away with commercial courses.

3. To ascertain the number of regular and irregular establishments offering some form of physical therapy treatment to the public, and under what authority they operate.

4. To encourage the presentation of papers on physical therapy subjects at meetings of state, county and city medical societies, and at hospital-staff meetings.

5. To see that physical therapy literature and books are obtainable in medical and hospital libraries, including such works as: "Handbook of Physical Therapy," published by the American Medical Association; "Principles and Practice of Physical Therapy," three volumes, loose-leaf set, edited by Doctors Pemberton, Mock, and Coulter, published by W. F. Pryor & Company; "Electrotherapy and Light Therapy," edited by Dr. Richard Kovacs, New York City, published by Lea & Febiger, Philadelphia, Pennsylvania; "Textbook of Physical Therapy" by Doctor Wolf, published by D. Appleton Century Company, Inc.; "Archives of Physical Therapy, X-Ray, and Radium," a monthly publication, the cost of which is $5 per year; address, 30 North Michigan Avenue, Chicago, Illinois.

Shortly after the appointment of the California State Committee, the Western Division of the American Physiotherapy Association, and Association of Technicians (including San Francisco, Los Angeles, Washington, and Oregon chapters) appointed contact representatives to act with the Committee on Physical Therapy of the California Medical Association. The sole purpose of this conjoint committee is to gather such information as organized medicine may call for at any time in relation to technicians of physiotherapy in the state.

It is a working committee, representing the entire Pacific Coast, and has seven members. These and similar groups, if there are any, should be a valuable asset to scientific physical therapy.

COMMENT

There are only two state committees in physical therapy in the whole United States—one on the eastern coast, the other on the Pacific Coast. How can physical therapy get adequate recognition unless more state committees are formed? It would aid greatly if at least one-half of the states had well organized, functioning committees. As soon as the medical profession understands that we are not merely trying to promote physical therapy, but are seeking to regulate its practice and turn the tide into legitimate channels, there should be no difficulty getting committees organized. Then on the day before each annual meeting of the various state medical societies, and while working in conjunction with the plan of the American Congress of Physical Therapy, we could have presented both constructive and instructive physical therapy programs.

REFLECTIONS CONCERNING NEUROPSYCHIATRY*

By Charles Lewis Allen, M. D.
Los Angeles

We are living in a time of the greatest scientific activity which the world has ever seen, and also in one of greatest uncertainty and unrest. The changed and changing views and attitudes of the people in all countries have not failed to profoundly affect medicine, notably neurology and psychiatry.

PSYCHOPATHIC REACTIONS TO MODERN CIVILIZATION

The social and political situations, and especially the influence of our mechanized civilization and crowding in large cities, with their hurry, excitements and dissipations, have proved intensely neuroticizing, as shown not only in actual nervous disease but also in the psychopathic reaction forms which complicate the picture in various illnesses.

---

* Chairman's address, Neuropsychiatry Section of the California Medical Association at the sixty-second annual session at Del Monte, April 24-27, 1933.

New inventions, while greatly adding to our power to combat unfavorable natural conditions, enormously facilitating our mobility and furnishing material comforts hitherto unknown, have made on the debit side a vast increase in accidental deaths and injuries, followed by prolonged permanent incapacity in which trauma to the nervous system, physical and psychic, plays an important part.

EFFECTS OF SOME MODERN THERAPEUTIC AGENTS

The application to medicine of forces previously beyond our control is showing that they possess also unsuspected disease-producing potentialities. We are encountering new forms of poisoning while the malign power of radium and x-rays, when improperly applied, and the lesser dangers of light therapy and diathermy, emphasize the necessity for knowledge and caution upon the part of those using them. In this connection we must consider the possibility of ill effects yet unknown from the development of still other forces.

The increased ease and rapidity of travel by land, sea and air which have brought nearly the whole world into closer contact, is serving also to distribute noxious agents previously localized, and we are getting acquainted with diseases formerly unfamiliar but now becoming pandemic.

Since the nervous system is the most highly organized and vulnerable of structures, the above considerations possess a special importance for those of us who are occupied with its diseases. We cannot turn backward, neither would anyone wish to surrender our great practical gains; rather, must we be prepared to utilize these and more to come, being ever on the lookout for possible ill effects, and prepared to combat them.

INTELLECTUAL CAPACITY OF MODERN MAN

It is the opinion of those best qualified to express themselves that, in his intellectual capacity, man has not advanced beyond the ancient Greeks, whose thought was of the highest. Much as we excel our ancestors in practical gains, amid the multiform activities of modern life, there seems to be little time left for thinking. Again, in our population, the people incapable of this exercise seem to increase out of proportion to those so capable. It appears that the much vaunted "birth control" appeals mainly to the capable.

DEFICIENCIES IN MODERN EDUCATIONAL METHODS

Our great American ideal of universal education is being found to have its limits, and vast sums of money are being wasted in trying to give higher education to those essentially uneducable.

Medicine has come to contain so much that no one mind can compass all its material. A present problem is how to prevent further overloading of the medical course, while conveying to the student sufficient theoretical and practical knowledge to fit him to enter upon general practice after its completion and at least a year's experience as a hospital interne. To do this the specialties will have to be consolidated, perhaps pared, unless the period of undergraduate study is lengthened. If paring is to be done, the neuropsychiatric goat is likely to be the sacrificial animal.

No one need too highly exalt his own specialty, since all are included under medicine and surgery. Specialties are properly postgraduate studies, and are best approached after a preliminary experience in general practice.

PLACE OF NEUROPSYCHIATRY IN THE MEDICAL CURRICULUM

However, we can rightly insist that the principles of neurology, medical psychology and psychiatry should be taught in the medical course, and that adequate clinical instruction be given in the senior year and during the hospital service. A large public hospital having a psychiatric department can furnish adequate material; but if mental diseases are not represented there, a short interneship in a state hospital should be required. The above should suffice to inculcate at least a proper viewpoint as to neuropsychiatry, a thing which most physicians now in practice do not seem to have obtained.

Neurology and psychiatry require a general and professional culture far beyond the average. The latter in particular presupposes an acquaintance with many subjects not strictly medical. Not the least service of the psychoanalytic school has been its encouragement of literary and anthropological studies.

Neurology and psychiatry are in the nature of things inseparable. Only he who is proficient in both disciplines can call himself "Neuropsychiatrist." Our specialties are up to date and ready to utilize all proved advances in medicine.

PRESENT KNOWLEDGE OF THE MIND IS FRAGMENTARY

Since our actual knowledge of the mind is only fragmentary, psychiatry is still largely empirical. Nevertheless it is striving mightily. It was not until physicians entered the field that psychology began to be applied practically. It has never lacked hypotheses and we must still live along with many, which little appeal to the medically trained. It is chiefly through the genius of Freud that it has ceased to be static and has become dynamic.

DYNAMIC NATURE OF FREUD'S TEACHINGS

We must remember that Freud deals with hypotheses hardly susceptible of exact proof, but many of his ideas fit in well with our experience and better explain certain mental symptoms than anything which we had before his time. While the most experienced psychiatrists hesitate to accept his views in their entirety, regarding him as too dogmatic and greatly exaggerating the sexual element, we owe him a great debt for his psychoanalytic method and its stimulating effect upon the more intimate investigation of mental phenomena.

The psychobiological method most closely approximates that of the exact sciences, and best appeals to the medically educated. This, while using primarily neurophysiology and pathology, anthropology and folklore, finds also a place for the Freudians, the "Gestalt" psychologists, the associationists and the behaviorists, and is attempting to combine these elements into a medical psychology which can be accepted by all physicians.

MENTAL HYGIENE

Extramural psychiatry in the form of mental hygiene has become an important part of our specialty and cannot be neglected. This started as a layman's movement, much of its work must be done by people without medical education; and unfortunately there is in some quarters a tendency to minimize the importance to it of the physician. If it is to exert the beneficent influence possible, its working must be kept strictly under medical influence. Only the trained physician can compass its scientific problems and restrain the overexuberant zeal of lay enthusiasts. To do this he must himself be able to keep his feet on the ground, and to discourage the meddlesome busybodies who are too prone to see, in natural childish manifestations and pranks, the working of some terrible complex and the beginning of a career of crime, and to invoke the law rather than to advise normal parental discipline. He must also be able to foresee and discourage the waste of people's money in unnecessary and futile "surveys" and other impracticable projects. Mental hygiene should investigate, consider and educate, with tact and avoidance of brusque collision with popular prejudices.

ANTAGONISM TO PHYSICIANS

Of recent decades there has arisen in the popular mind a certain distrust, even hostility to physicians. This is fostered, of course, by quacks, faddists and half-educated people. However, it has also been furthered by the fact that too many of the regular medical profession, having become infected by the prevailing idea that success is measured by money-getting capacity alone, have been trying to exact fees disproportionate to the financial situation of the patient. This abuse, however, has been little prevalent in neuropsychiatry, notoriously the least lucrative of specialties. It is fortunate that so many of our number are engaged in public work which affords at least a modicum of compensation.

Unfavorable financial conditions have combined with popular disfavor and an overcrowded profession to bring about our present unhappy situation. Measures to relieve the last cause have already been initiated, and it is hoped that they will improve the quality while diminishing the quantity of the medical output. However, considerable time must elapse before they can afford much relief.

MEDICAL PROFESSION MUST STUDY ITS SOCIO-ECONOMIC PROBLEMS

The recommendations of the majority of the "Committee on the Costs of Medical Care" are not satisfactory to the medical profession as a whole, and it is plain that we must take more active steps to protect our interests and not supinely accept just what is doled out to us. In this our group must unite with the others. Physicians have been too indifferent to what goes on in Congress, state legislatures and local governing bodies. Only votes affect politicians, and while we have been looking askance at so-called "political doctors," to protect their interests, physicians must take a more active part in politics. When our medical associations can emphasize their just demands by showing that they can control a block of votes, some attention will be paid to them. In other countries prominent physicians sit in both upper and lower parliamentary bodies. Few do in the United States. To the few medical men in Congress we owe such crumbs as have been cast to us. More should be willing to serve, even at some personal sacrifice.

NEUROPSYCHIATRY AND OUR LAWS AND INSTITUTIONS

Upon no branch of medicine does the hand of the law rest so heavily as upon neuropsychiatry, and we are particularly dependent upon the laws affecting the insane and the incompetent. In California these laws are still far from satisfactory. If we can convince our Association of the importance of this matter and it will exert all its influence, we should be able to secure such improvement as to bring this state into line with the progressive eastern commonwealths.

Our state hospitals are greatly overcrowded, and while a former legislature provided for a new institution in the south, its location and construction have been unduly delayed. Encouraging rather than discouraging private institutions for mental patients would save money for the state, and would be responsive to the wishes of their relatives and physicians.

The Department of Institutions, while safeguarding the care of these unfortunates, should not demand so costly an equipment as to make it impossible to keep them at moderate rates. It should also protect licensed institutions from the persecutions of petty local boards and associations, which have been all too common. The neuropsychiatric profession should be represented in this department by one of its trusted members.

SCANDAL OF EXPERT TESTIMONY

The scandal of expert testimony is of legal rather than of medical origin, but it cannot be terminated until all reputable psychiatrists refuse to enter criminal cases, except as impartial experts appointed by the court, as recommended by the American Psychiatric Association and the Bar Association.

We have a right to demand satisfactory qualifications of those who would practice neuropsychiatry, and it is our duty as a section of the California Medical Association to further the movement to establish professional standards for all specialties, and to eliminate as far as possible pseudo specialists.

214 South Lafayette Park Place.

HYPERSENSITIVITY OF THE SKIN TO LIGHT*

By LAURENCE R. TAUSSIG, M. D.
San Francisco

DERMATOLOGISTS have long recognized that abnormal sensitiveness to light was the determining factor in the development of a number of skin conditions. Among the best known of these are hydroa aestivale seu vacciniforme, eczema solare, pellagra, xeroderma pigmentosum, and lupus erythematosus. Although a considerable amount of clinical and laboratory research has been done to establish the mechanism of this phenomenon, it has not as yet been satisfactorily explained. For this reason, it is thought worth while to describe two patients with skin eruptions apparently due to exposure to the sun, which presented certain unusual features.

REPORT OF CASES

CASE 1.—D., U. C. O. P. D., No. 211134, a boy seven years of age, was first seen in the dermatology clinic of the University of California Medical School in March, 1932. He had an eruption which had first appeared the previous July and had been present almost constantly since then. The first attack had developed following a severe dermatitis due to exposure to poison oak, to which the patient is very sensitive. He had also had varicella a short time before. The lesions had cleared and recurred under various local applications, including one exposure to x-ray. So far as the mother could tell, the attacks were not connected with exposure to the sun. Dark-colored urine had never been noted. When first seen, the eruption consisted of groups of vesicles located on the lobes of both ears and over both cheeks. No scarring was present, and there were no subjective symptoms. The boy was a normal-appearing, husky individual with dark hair and a dark complexion. The physical examination made in the medical clinic of the out-patient department demonstrated no pathology. Tests in the allergy clinic failed to reveal any abnormalities. Treatment consisted in the application of mild ointments such as boric acid (ointment) and protection from the direct sun. The condition cleared entirely by June, 1932, between which time and April, 1933, no further lesions occurred. On April 10 he again entered the clinic with an eruption similar to the one present on his first visit, and this second eruption had developed following an excessive exposure to the sun while in swimming at Santa Cruz. In addition to the vesicular eruption on the ear lobes and cheeks, he had a small bulla on the back of each hand. Spectroscopic examination of the urine did not reveal the presence of porphyrin. This attack cleared rapidly under the application of ichthyol in calamin lotion.

* * *

CASE 2.—G. B., Children's Hospital, No. 74228, a boy four years of age, was first seen on March 10, 1933. His eruption had appeared at the age of ten months with the development of blisters on the fingers, and it had then gradually spread as successive crops of blisters on all of the exposed portions of the body. The patient's mother stated that when he wore short trousers lesions occurred on the knees and legs, but that they ceased to develop when these areas were kept covered. When first examined, it was noted that the eruption was limited to the exposed portions of the body, being most marked on the hands, face and scalp, with less marked involvement of the forearms and legs. The fingers were thickened, resembling the appearance of a tuberculous dactylitis, and the nails were partially destroyed. Crusted lesions were present here and there on the backs of the hands and on the forearms, in addition to atrophic and slightly thickened scars. On the backs of the hands, too, some of the scars contained milia-like bodies as described in epidermolysis bullosum. The face presented marked scarring, sufficient to produce slight deformity of the nose, while on the cheeks were several crusted lesions. The scalp, especially at the vertex, was the seat of a crusted eruption without extensive scarring. There were a few depigmented scars noted on the knees and legs. An unusual abundance of lanugal hair was present on the forearms and face, and he was said to have a poor appetite and a tendency to constipation. Physical examination disclosed a small-boned, undernourished, anemic-looking boy, but the patient presented an intelligence somewhat above normal for his age. He was found to have a congenital heart of mild grade. The blood count on entry to the hospital showed: hemoglobin, 61 per cent; red blood cells, 2,980,000; white blood cells, 15,500. The blood Wassermann test was negative, as was the tuberculin test, both to the bovine and human strains. The basal metabolism was plus 24 per cent. The urine was of a light port-wine color, and spectroscopic examination showed the presence of uroporphyrin. No other abnormality of the urine was observed. During the time that he was under observation in the hospital, the crusted lesions cleared to a considerable extent under mild local applications, and the red blood count increased to 4,300,000 under a diet rich in vitamins. An exposure of a small area of the abdomen to the air-cooled quartz mercury arc lamp produced a normal mild erythema, as did a similar exposure on one knee. Exposure to the direct sunlight of another small area on the other knee also failed to produce an abnormal reaction, as did sunlight filtered through a glass slide. During the period of observation the apparent amount of porphyrin in the urine, as evidenced by the degree of discoloration, varied somewhat from time to time, but was always present. At no time during hospitalization were bullae or vesicles noted.

COMMENT

These two patients both presented eruptions which were apparently due to exposure to sunlight, but they differed markedly in the grade and extent of the involvement. It seems evident that the degree of sensitiveness of the first case was much milder than in the second. Both cases should probably be classified as varieties of hydroa vacciniforme in spite of divergences from the classical complex. Both patients were male children, and their eruptions were primarily bullous or vesicular and were limited to exposed portions of the body. Neither one showed seasonal variations. In the first case, the last attack definitely followed an unusually marked exposure to the sun after a prolonged period (nine months) of freedom from symptoms likely due to protection from the sun. The second patient developed his symptoms at the age at which he was first exposed to sunlight (ten months), and he had lived an open-air existence as much as possible since then. It is of particular importance to note that the legs remained free of lesions when they were covered; it may also be of value to note that this child was undernourished and constipated. The lack of abnormal reaction, however, to experimental exposure to artificial ultraviolet light and to sunlight is difficult to explain. One of the tests was made on the abdomen and would not be expected to show an abnormal reaction. The other tests were done on the knees, which had previously been the sites of lesions; but the fact that they had been kept covered may explain the loss of sensitiveness.

---

* From the department of dermatology, University of California Medical School.

* Chairman's address, Dermatology and Syphilology Section of the California Medical Association, at the sixty-second annual session, Del Monte, April 24-27, 1933.

The porphyrinuria present in the second case is of particular interest in that it was formerly thought that the porphyrins were photosensitizers and that their presence was the determining factor in the development of hydroa-like eruptions, even though they were demonstrable in less than half of the cases. Schreus and Carrié pointed out that a number of authors consider that the presence of porphyrins in the urine in considerable amounts indicates a congenital porphyrinuria which may be associated with light sensitiveness. This light sensitiveness is not true hydroa, according to this group. In the past few years the opinion has gained ground that porphyrinuria was the result of changes which occurred as a result of exposure to the sun.

384 Post Street.

TUBERCULOUS CAVITIES—THEIR SIGNIFICANCE, PROGNOSIS AND TREATMENT*

By Carl R. Howson, M. D.
Los Angeles

Discussion *by Robert A. Peers, M.D., Colfax; F. M. Pottenger, M.D., Monrovia; Philip H. Pierson, M.D., San Francisco.*

In 1921 Graff[1] stated that the tuberculous cavity is the death sentence for its bearer.

Pinner,[1] too, says: "Cavities are, of course, compatible with long periods of life; but, barring intercurrent disease, their bearers will eventually die from causes more or less directly attributable to the cavity." In the face of these striking statements, a study of the situation seems worth while.

CLINICAL TUBERCULOSIS AN ALLERGIC PHENOMENON

Clinical tuberculosis is an allergic phenomenon. The inflammatory reaction and the symptoms of toxemia are primarily a reaction by the tissues to the bacterial proteins. The entrance of the tubercle bacillus into the tissues of an individual who has not experienced a previous infection excites only a mild nonspecific inflammatory reaction, followed by destruction or encapsulation of the organism.

This is simply the response of the tissues to the presence of a foreign body. In the course of three or four weeks the tissues become allergic, and an acute inflammatory reaction is set up. In the already allergic individual—and the large majority of adults come within this category—the inflammatory reaction is prompt and vigorous, varying in intensity according to the degree of allergy possessed by the individual and the amount of bacterial protein—antigen—present. The virulence of the bacilli has always been considered to be an essential factor, but the recent work of Bogen[2] suggests that this may play a much smaller rôle than we have thought. Differences in the chemistry of the tissues of different individuals, or of the same person at different times, undoubtedly play a part, though the substances concerned are as yet largely unknown.

This allergic response is of two types—exudative and proliferative. In the exudative type the reaction is acute, with extensive exudation. In the proliferative type it is more chronic, with a strong tendency to the formation of fibrous tissue. Cases are classified as exudative or proliferative, depending upon which phenomenon predominates in the lesion, but both processes may be and usually are present at the same time in different portions of the areas involved.

EXUDATIVE TYPE

The exudative type is distinguished by the acuteness of the inflammatory reaction about the focus of infection. The pulmonary alveoli in the area immediately surrounding the bacilli are filled with an inflammatory exudate—the allergic response to the tubercle toxins† rather than to the presence of the bacilli themselves.

We have, then, a central area, more or less well defined, containing the tubercle bacilli and the epithelioid cells, round cells, etc., which go to make up the tubercle proper. Surrounding this is a more or less extensive area of collateral inflammation—pneumonitis. As encapsulation of the bacilli proceeds, with limitation of the circulation of toxic products, this collateral inflammation tends to subside, and absorption of the exudate takes place as in lobar or bronchopneumonia, though much more slowly. Its retrogression can be clearly seen if serial roentgenograms are taken at suitable intervals.

In the center of these areas, where the bacilli are present in the greatest numbers, the concentration of toxic bacillary products may be sufficient to cause necrosis. This occurs in most cases of tubercle formation. The individual tubercle covers an extremely small area; and if the process is confined to localized tubercle formation, comparatively little damage is done. But unfortunately this is not always the case, and larger areas of necrosis frequently develop. Whether this is by a gradual enlargement of the initial necrotic area, as takes place in an ordinary furuncle, or a fusion of contiguous enlarging tubercles comparable to carbuncle formation, is not material to this discussion.

As the necrotic tissue liquefies, it is only required that rupture and evacuation into a bronchus occur. We then have definite cavity formation. Strictly speaking, the evacuation of a single tubercle constitutes cavity formation, but for practical purposes we limit the term to areas large enough to be seen on the x-ray film.

---

* Presented at the eighty-eighth semi-annual meeting of the Southern California Medical Association, Pasadena, April 8, 1933.

† The term, "tubercle toxins," is loosely used to designate the products of tubercle bacilli. No true toxins ever have been demonstrated. The products of the tubercle bacillus are toxic only after allergy to them has been developed; that is, they are toxic only to the allergic individual.

Table 1.—*Results in Pulmonary Cavities at the End of Six Years*

CAVITIES—6 YEARS

	Total	Arrested	Quiescent	Improved	Unimproved	Worse	Dead
Under 1.5 inches	7	0	2	1	0	3	1
1.5 to 2.5 inches	15	2	2	3	0	2	6
Over 2.5 inches	10	0	0	2	0	1	7
Multiple	6	0	0	2	0	1	3
Total	38	2	4	8	0	7	17
Per cent	100	5	10	21	0	18	45

These cavities are "acute" cavities. They may be of any size and of any shape, but are usually not very large; and they form in the early weeks or months following the onset of the disease, or during an exacerbation. They are surrounded by a somewhat irregular wall of infiltration containing relatively little fibrous tissue.

PROLIFERATIVE TYPE

In the proliferative type of tuberculosis, as has already been noted, fibrous tissue formation is the predominating phenomenon. The process is essentially a chronic one. It may have been going on for many months or even years. The tissues are allergic, but they also possess a high degree of tolerance to the bacillary products. A high degree of immunity is present, but not quite sufficient to arrest the progress of the infection. In the presence of this fibrous tissue a concentration of toxins sufficient to cause necrosis is finally reached, and a cavity formed. Usually this cavity has been present for some time before the patient is seen by the physician. Its wall contains much fibrous tissue, and in consequence is more or less rigid. The fibrous tissue in the adjacent areas renders those portions of the lung much less elastic than normal. Because of the long duration of the disease, we are apt to find pleural adhesions, fixed mediastinum, etc.

SIGNIFICANCE

In general we may say, therefore, that cavity formation indicates an intense infection in that portion of the lung. It indicates, also, a degree of immunity which enables the tissues to localize the infection rather than to permit its dissemination throughout the lung. It is analogous to the difference between pyogenic abscess and septicemia.

PROGNOSIS

The time is not long past since the general opinion was, once a cavity, always a cavity. The taking of serial roentgenograms of patients, however, has demonstrated beyond question that cavities, particularly acute cavities having a spheroidal outline, can and frequently do heal, becoming obliterated and leaving only a small amount of fibrous tissue to indicate their former existence.

The cavity which is not healed usually continues to throw off tubercle bacilli. Exceptionally, the wall may heal to a smooth inner lining of fibrous tissue, but in most cases activity persists to a greater or less degree. For this reason, unhealed cavities constitute a very definite menace to the future health of the individual. Numerous studies have been made to determine the extent of this danger.

Kötter [3] states that clinical healing of cavities occurs in 15 per cent of cases. Sprungmann [4] says that two years after taking the cure 61.7 per cent of cavity patients were dead, and in five years 75.7 per cent.

Barnes and Barnes,[5] in a study of 1,454 cavity cases, found that, at the end of one year after diagnosis, 80 per cent of the patients were dead, and at the end of five years 90 per cent had died.

Head, Schlack, and Marx [6] (Table 1) followed thirty-eight patients with cavities over a period of six years, and found that at the end of that time 45 per cent were dead and 18 per cent worse, and that only 5 per cent could be considered arrested and 10 per cent quiescent. Their figures also indicate that the smaller the cavity, the better the prognosis.

Fales and Beaudet,[7] of the U. S. Veterans' Bureau, in a study of 147 patients with cavity formation (Table 2), observed over a period of twenty-four months, found that a total of 62 (42 per cent) had healed.

Their figures show that, of the cavities occurring in cases with minimal involvement, two out of three healed. These, of course, were small

Table 2.—*Results in Pulmonary Cavities at the End of Twenty-four Months*

CAVITIES—24 MONTHS

	Minimal		M. A.		F. A.		Total		Per Cent Healed
	Number	Healed	Number	Healed	Number	Healed	Number	Healed	
Under 2.5 cm.	3	2	32	23	21	12	56	37	66
2.5 cm. or over	..	..	15	7	29	3	44	10	23
Multiple	..	..	8	4	39	11	47	15	32
Total	3	2	55	34	89	26	147	62	42
Healed	66 per cent		62 per cent		30 per cent				

cavities. In 55 moderately advanced cases, 34 (62 per cent) of the cavities were healed after two years of more or less continuous rest, while of 89 far-advanced cases only 26 (30 per cent) were healed. When the cavities are classified as to size, it is seen that of those under 2.5 centimeters in diameter, 55 per cent healed, while only 23 per cent of the cavities larger than that, and 32 per cent of the multiple cavities, healed.

These are easily the most favorable results reported in a series of this size, and it is a striking demonstration of what can be accomplished by persistence. In dealing with private patients, however, one cannot but feel that twenty-four months is rather long to wait before concluding that a cavity requires more active treatment.

All these statistics, of course, refer to patients who received only conservative treatment. Obviously, Graff's statement that the tuberculous cavity is the death sentence for its bearer is applicable only to medium-sized and large cavities, that is, cavities having a diameter of two or three centimeters, which do not receive surgical treatment. It *is* evident, however, that an open cavity seriously complicates the prognosis, and that the gravity of this complication is roughly proportionate to the number and size of the cavities present.

TREATMENT

In justice to the patient, therefore, every reasonable means must be used to secure the healing of any cavities which may be present. These means will, of course, vary to some extent with the conditions found in the particular case under consideration. With rare exceptions conservative measures should be given a fair trial. When they fail, some form of collapse therapy is indicated.

The simplest procedure and the one carrying the least risk for the patient is pneumothorax, the lung being slowly collapsed and the collapse maintained for a period of two to four years in the average case. The perfection of the technique for the induction and maintenance of pneumothorax, and the popularization of the operation, may fairly be considered the greatest single advance in the treatment of tuberculosis in the past generation. There is no more spectacular result in the entire field of medicine and surgery than that obtained by a successful pneumothorax in a very ill patient.

A plan of procedure applicable to most cases with cavities may be outlined as follows:

As soon as the diagnosis is made, the patient is immediately placed on bed rest. If he is able to use the bedpan without undue strain — and many are not—he remains absolutely in bed. If not, and his strength permits, he is allowed to go to the bathroom for bowel movements. A fair proportion of patients with early and more or less acute lesions will respond promptly with a diminution in temperature and pulse rate, the former frequently becoming normal in from within a few days to a week or two. Cough and expectoration show a corresponding improvement, though some expectoration usually persists for a considerable period. At the end of three to six weeks (the time depending somewhat upon the extent and acuteness of the lesion), stereoscopic roentgenograms are taken, by portable apparatus if necessary. If the cavity is getting smaller, the program is continued and another picture made in six weeks to two months. As long as the cavity is diminishing, no radical measures are indicated. It is surprising and gratifying to see the rapidity with which this can take place at times; frequently it will continue to obliteration, the patient becoming practically symptom-free and usually showing a substantial gain in weight.

A word of warning is in order in dealing with these favorable cases from this time forward. While exercise may be carefully increased, this increase must be carried out very slowly, and particular care taken to protect against acute respiratory infections, because a comparatively slight degree of overexercise, or a severe cold, may cause a softening of the fibrous tissue and a reestablishment of the cavity with startling rapidity. If these pitfalls are avoided, the ultimate result is most excellent, because, along with the disappearance of the cavity, there will be a considerable degree of resolution in the surrounding portions of the lung. The ultimate amount of fibrous tissue is usually surprisingly small as compared with the amount of involvement originally present.

When the patient does not respond to a strict rest program, and the symptoms fail to show a reasonable degree of amelioration, the second roentgenogram will usually fail to reveal improvement in the lesion, and may show progression. Depending upon the extent and activity of the lesion and the estimated risk of extension, particularly to the other lung, collapse therapy may be indicated at this time, or one may temporize for another month. The longer one waits, the greater is the risk of the formation of pleural adhesions which will render collapse impossible by any measures short of thoracoplasty. I have more frequently regretted postponing pneumothorax than inducing it too soon.

Chronic cavities, because of the fibrous tissue present in their walls, frequently require a somewhat different procedure. In some cases also, one will find evidence of beginning complications, such as extension of the infection into the better lung, which call for immediate intervention. For reasons not yet fully understood, the clover-leaf type of cavity (usually acute) shows a marked tendency to enlarge rather than heal under conservative treatment. In such cases, and in the absence of contraindications, therapeutic pneumothorax is attempted.

Unfortunately, because of pleural adhesions, it is impossible to secure free pleural space in approximately one-third of the cases and, for these, more radical measures have to be considered. Sometimes a simple exairesis of the phrenic nerve suffices. Section and avulsion of the phrenic nerve supplying the diaphragm on the affected side is a minor operation, so far as shock to the patient is concerned, though not free from occasional serious and even fatal complications. The resultant paralysis of the diaphragm puts a stop to the downward pull on the lung with each inspiration, and to that extent reduces pulmonary activity. Because of the positive intra-abdominal pressure and the negative intrapulmonary pressure, the paralyzed and relaxed diaphragm tends to rise, reducing the volume of that half of the thorax by from 15 to 30 per cent. The resultant relaxation of the lung exercises a salutary effect upon the lesions situated in the lower portion, and frequently is of great benefit to those in the upper portion, even as high as the apex.

It may not be amiss to sound a word of warning to the surgeon who is impressed by the apparent simplicity of the operation. The phrenic nerve presents definite anomalies in over 30 per cent of cases. The occasional persistence of diaphragmatic motility, and the not rare development of ptosis and permanent pupillary dilatation, attest to the pitfalls the operation affords for the unwary.

If the disease is extensive and practically unilateral, or if the cavity is large, thoracoplasty may have to be considered. We venture the hope that some of the partial thoracoplastic operations which are now being developed by the thoracic surgeons may prove satisfactory for apical lesions and so enable us to conserve the greater part of the functioning pulmonary tissue in the remaining portion of the lung.

Occasionally pneumothorax is induced, but adhesions prevent a sufficient degree of collapse of the more severely diseased portions of the lung to secure a satisfactory result. In time, many of these stretch sufficiently. If they do not, and they are very dense, it may be necessary to resort to thoracoplasty. In a few cases they are so small and thin that they may be severed by the cautery (intrapleural pneumolysis), using an instrument somewhat similar to the cystoscope. There is danger of cutting through a blood vessel with resultant serious or fatal hemorrhage, or severing a tongue of pulmonary tissue drawn out into the adhesion, with consequent infection of the pleura and empyema of a malignant type. In skilled hands this seldom occurs, but the operation is one calling for a high degree of technical ability.

A judicious selection, and use of these methods which modern medical science has placed at our disposal, will not only help us to a more optimistic attitude toward the tuberculous patient, but will enable us to shorten the convalescent period and restore many more of these unfortunates to health and economic independence.

SUMMARY

1. Cavities constitute a serious complication of a pulmonary tuberculous process.
2. Their persistence means, in most cases, a relatively short expectation of life.
3. A trial of conservative measures should usually be made.
4. If unsuccessful, we should not hesitate to have recourse to collapse therapy.
5. Too much time should not be lost before considering the means to this end.

307 West Eighth Street.

REFERENCES

1. Pinner, Max: Cavity in Tuberculosis, Roentgenologic and Anatomic Studies, Amer. Jour. of Roent., 20:6, 519 (Dec.), 1928.

2. Bogen, Emil: Experimental Tuberculosis in Guinea-pigs, Tr. Twenty-eighth Annual Meeting, National Tuberculosis Association, 1932.

3. Kötter, K.: Zur Kavernenprognose, Ztschr. f. Tuberk., 49:350, 1928.

4. Sprungmann, E.: Zur Kavernenprognose des Industriearbeiters. Zeitschr. f. Tuberk., 51:432, 1928.

5. Barnes, Harry L., and Lena, R. P.: The Duration of Life in Pulmonary Tuberculosis with Cavity, Am. Rev. Tb., 18:412, 1928.

6. Head, Jerome; Schlack, Otto C., and Marx, Joseph: A Statistical Estimation of the Value of a Programme for Collapse Therapy, Am. Review of Tb., 26:6, 653 (Dec.), 1932.

7. Fales, Louis H., and Beaudet, E. A.: The Healing of Tuberculosis Cavities, Am. Review of Tb., 23:6, 690 (June), 1931.

DISCUSSION

Robert A. Peers, M. D. (Colfax).—Doctor Howson gives in concise, easily understood language a clear picture of the pathology of tuberculosis as viewed in the light of recent studies in allergy as related to tuberculous infection. He has traced briefly and lucidly what happens in both the exudative and proliferative types of pulmonary tuberculosis. He reviews the mechanism of cavity formation, the potential danger of cavities, and the pessimism of many writers in discussing the prognosis in patients with cavity formation.

All of this is important, but what strikes the writer, in reviewing Doctor Howson's paper, is his common sense, conservative but at the same time complete, method of attack in the treatment of cavity. He agrees as to the gravity of cavity formation, especially large-sized cavity, but he also recognizes that cavities, sometimes quite large cavities, heal spontaneously if given rest and time. He acknowledges, too, that there are cavities which rest and time alone will not heal, and which must be vigorously attacked by pneumothorax, by the intrathoracic severing of adhesions, by phrenic exairesis, by thoracoplasty or other surgical methods.

Everyone of experience, who has watched his patients closely over a considerable period of time with serial x-rays or fluoroscopic screenings, will bear witness to the truth of Doctor Howson's presentation. He will see fairly large cavities become smaller and smaller, finally disappearing and leaving, as Doctor Howson has stated, "only a small amount of fibrous tissue to indicate their former existence." And with this experience in mind he becomes conservative. Again, he will see in other patients with apparently similar involvement the increase in size of cavity and/or the spread of disease, and he will recognize that delay is no longer conservatism, but procrastination. The writer thinks that we all have felt, to quote again: "I have more frequently regretted postponing pneumothorax than inducing it too soon."

That some cavities will heal spontaneously, is certain. That some others will not do so is also certain. That the prognosis in every case of cavity is not gloomy, is also certain. That upon the skill and judgment of the attending physician depends largely the prognosis, is certain. The ability to know when to be conservative and when to invoke surgical measures is an expression of the possession of what is known as "art in medicine."

⁂

F. M. Pottenger, M. D. (Monrovia).—It is refreshing to hear an optimistic paper regarding tuberculous cavities. I have long contended that the usual pessimistic attitude toward the healing of tuberculous cavities is wrong. It is not based on an understanding of either tuberculosis or the intrathoracic mechanics. Too many of the reports which have been published in the past have been recitations of the final outcome of patients who had destructive lesions in the lung, rather than descriptions of the results following the intelligent treatment of cavities when all conditions which favor or hinder healing have been taken into consideration.

I pointed out some time ago, in a paper which appeared in the *American Review of Tuberculosis,* that the two principal factors in the healing of tuberculosis are the resistance of the patient, both natural and specific, and the intrathoracic mechanics; and further pointed out that in early simple lesions resistance is most important, while in advanced and far advanced cases intrathoracic mechanics are often of greater importance, because resistance may be satisfactory, but healing is prevented by mechanical obstacles, such as fibrosis, adherent pleura, fixed mediastinum, and widespread emphysema.

It has been my experience that a large percentage of acute cavities, particularly in patients suffering from predominantly exudative tuberculosis, will heal without surgical interference. The reason for this is that most of the conditions which are favorable to healing are present. The patient's health, as a rule, has not been undermined by long illness; as a rule the pleura is free, the mediastinum is movable; and the pulmonary tissues outside of the area of involvement are elastic and able to take on the amount of compensatory emphysema necessary to compensate for the loss produced by the cavity.

I have found that the usual regimen of rest, hygienic living, good food, assisted by shot bags over the infected area to lessen the motion, have been sufficient to bring about healing in nearly all cases of this type.

In cavities which appear in chronic proliferative tuberculosis, the healing is not so easy because, as a rule, in this type there has been more or less interference with the factors favorable to compensation. The lesion is proliferative, consequently the tissues are not so elastic; pleural adhesions are more apt to be present; the mediastinum is more apt to be fixed, and compensatory emphysema in many of these cases has already taken place to a greater or lesser degree. In spite of this many fresh cavities in lesions predominantly proliferative will heal.

In the chronic cavity surrounded by a dense fibrous wall, healing rarely occurs under a noninterference policy, because no matter how high the immunity the necessary compensation is interfered with.

In summing up our experience, I would say:

1. An acute cavity in a lesion predominantly exudative will nearly always heal unless it be well up in an apex which is covered with a pleural cap, or close to the hilum, where the tissues are very dense.
2. An acute cavity in chronic proliferative tuberculosis will heal in a much smaller percentage of cases, because of interference with the various mechanical factors.
3. Cavities with dense fibrous walls will rarely heal without the aid of some form of compression.

⁂

Philip H. Pierson, M. D. (490 Post Street, San Francisco).—Doctor Howson's paper presents clearly and concisely important facts that bear emphasis. The treatment, when a cavity is present, is much more likely to succeed if the cavity has but recently developed, and for two reasons: (1) in time, epithelium may grow from a neighboring bronchus and cover the inner wall, making subsequent adhesion of the walls impossible when any form of collapse therapy is instituted; and (2) a thin-walled cavity disappears by, first, the absorption of this walling-off membrane, and then dilation of the surrounding alveoli.

I agree that generally there should be a waiting period after the patient is put to bed at absolute rest, for Nature has often shown herself to be very helpful if given a chance. If no improvement is evident in the cavity in three months, interference should be considered. If we are dealing with bilateral disease with the cavity on only one side, a longer delay may be in order, for the picture is considerably complicated by the manifest disease in the contralateral lung.

The length of time pneumothorax must be continued is a difficult question to answer. A treatment which is succeeding in keeping the patient well may be a good one to continue for more than two to four years.

A small adhesion which is holding open a cavity may be burned by cautery. I saw Doctor Jessen deal with a broad band by removing a section of the two overlying ribs, and then pneumothorax was adequate.

Where apical cavities are adherent, so that pneumothorax is unsuccessful, I doubt that phrenectomy will benefit; but with subclavicular ones this procedure is helpful at times. The complete excision of the upper three ribs and a portion of one or two more posteriorly, has been successful in a small series, and it has saved for the patient his relatively good lower lobe, much of which would have been sacrificed by phrenectomy.

PREGNANCY AS A COMPLICATION OF HEART DISEASE*

By Ina M. Richter, M. D.

and

John F. Rickard, M. D.
San Francisco

Discussion *by Saxton T. Pope, Jr., M. D., San Francisco; Alice F. Maxwell, M. D., San Francisco; William J. Kerr, M. D., San Francisco.*

The effect of pregnancy on women with abnormal cardiac mechanism has been widely studied, especially during the last ten to fifteen years. Certain facts of the relationship have been rather satisfactorily established: that for women with certain types of heart disease pregnancy brings an additional risk; that cesarean section is the safest method of delivery for patients with decompensation; and that local anesthesia is preferable to general, except for the hyperemotional patient. Not yet so well established are the following points which we would suggest for further investigation: the diagnostic differentiation of patients with organic lesions from those showing abnormal signs and symptoms wrongly attributed to cardiac disease; the functional capacity of the myocardium in organic lesions in especial reference to the comparative value of frequent periodic observation versus exercise tests; and the effect of an inadequate cardiovascular system on the fetus.

CLINICAL MATERIAL FOR THIS STUDY

Our group of eighty-six pregnant women was referred by the department of obstetrics of the University of California Hospital and studied in the Cardiac Clinic of the same institution. The patients were seen every two to four weeks during pregnancy, and again postpartum wherever possible. These patients have been grouped for study as follows:

---

* From the department of medicine, University of California Medical School.

* Read before the General Medicine Section of the California Medical Association at the sixty-second annual session, Del Monte, April 24-27, 1933.

Rheumatic fever syndrome (including one patient who also had a congenital lesion)	44
Patients with a positive history of diphtheria	12
Patients with congenital anomalies (including one patient who also had rheumatic fever)	7
Patients with arrythmias (two giving history of diphtheria)	6
Patient with myocardial degeneration	1
Patient with positive Wassermann (also gave history of diphtheria)	1
Patients with abnormal signs and symptoms, but no organic lesion	21

RHEUMATIC FEVER

The largest group, and from every point of view the most important, are those with the diagnosis of rheumatic fever. Thirty-seven of them were American by birth and parentage. They varied in age from 18 to 39, although the majority fell in the age group, 20 to 25. Twenty-one were primiparae, eight were secundiparae, three were triparae, six were quadriparae, one was a quintiparae, and two were sextiparae. In nineteen out of the forty-four, there was a history of rheumatic fever in some other member of the patient's immediate family. Twenty-eight gave a past history of rheumatic fever or chorea, or both, and the remainder a history of frequent tonsillitis or growing pains, or no suggestive history at all, but presented lesions characteristic of rheumatic fever. The anatomical diagnoses were as follows:

Mitral stenosis	11
Mitral stenosis and insufficiency	11
Mitral insufficiency	4
Mitral stenosis and insufficiency, and aortic insufficiency	2
Aortic insufficiency	1
Potential (giving a history of rheumatic fever)	15

MORTALITY

Among thirty-seven completed patients there have been one maternal and three fetal deaths. The maternal death was in a young primipara with mitral stenosis and insufficiency, and aortic insufficiency, who, though constantly on the verge of decompensation, was carried safely through pregnancy and delivered by cesarean section, only to die of an embolus seven weeks postpartum. One fetal death can in no way be attributed to the mother's cardiac condition, and the other two will be discussed later in connection with the history of a patient in another etiologic group.

OTHER DISEASES

The twelve patients having a history of diphtheria were analyzed from the point of view of any possible myocardial involvement which could be further influenced by pregnancy. Two of them had also a history of rheumatic fever, and are included in that group. With the exception of one, to be later discussed, these patients showed no demonstrable valvular or myocardial lesions.

A small group of six patients showed marked arrhythmias, due to auricular and ventricular and, in one case, nodal extrasystoles. One of these is not yet delivered, but the others had no difficulty of any sort, although the extrasystoles persisted throughout pregnancy and continued postpartum.

The seven patients with congenital abnormalities were all primiparae, with the exception of the one who had a superimposed rheumatic fever. She had had one child and several miscarriages, and it was thought best to abort and sterilize her. The others presented no difficulty. The most interesting point about these patients is that five of the seven were foreigners belonging to the Latin races, whereas only two out of the forty-four with a history of rheumatic fever belonged to this racial group.

The luetic patient showed no cardiac lesion or difficulty. The one with myocardial damage was thirty-eight, gave a history of cardiovascular disease in both parents, and had several attacks of severe precordial pain during her pregnancy, but was delivered without difficulty or complication.

The twenty-one patients who had abnormal signs and symptoms suggestive of cardiovascular disease presented no consistent etiology or findings. They were followed, however, because there is difficulty in recognizing cardiac lesions by auscultatory signs, especially when pregnancy is far advanced, and in a locality such as San Francisco, where a fair percentage of patients presenting the lesions of rheumatic fever do not always have a history characteristic of this condition.

DIAGNOSTIC CRITERIA

What are the diagnostic criteria in determining, in the presence of a pregnancy, whether or not a woman has organic heart disease? There are two real diagnostic difficulties, owing to the variability in site and transmission of murmurs caused by lesions that are not yet well established, and the further shifting of these murmurs caused by the pregnant uterus. Anyone who has listened to the hearts of children over a consecutive period of time following an attack of rheumatic fever or chorea, knows that it is often months, and sometimes years, before a murmur can be recognized as the typical presystolic and systolic murmurs of mitral stenosis and insufficiency. If one adds to this difficulty the fact that in many localities there is no antecedent history of rheumatic fever or chorea, and the fact that many pregnant women fall in the age group where these lesions cannot yet be clearly recognized, the diagnostic difficulty is even greater. This makes it necessary to follow closely patients who present abnormal signs and symptoms, especially if there is a history in the patient of growing pains and/or frequent tonsillitis, or of rheumatic fever in the patient's immediate family with or without a suggestive history in the patient herself. With such patients an active process, or the reactivation of a quiescent process, must be kept in mind. We have found that where there was such activity the patients have gone through pregnancy, delivery, and puerperium quite uneventfully, and been controlled with sodium salicylate; but that in such patients, signs of activity have continued postpartum. We are not at all sure that the pregnancy should not be interrupted in such cases. Whether or not the pregnancy had anything to do with the reactivation or continued activity we cannot say, as the patients were already in this condition when they came to us.

But even in patients in whom the pathologic findings have become quite chronic, and are easily identified, there is often difficulty of diagnosis as the pregnancy advances, and even early in pregnancy on a single examination. Not long ago we selected from the group of patients, two who showed textbook pictures of mitral stenosis, to demonstrate to a group of postgraduate students. These patients were not advanced in their pregnancies, and were selected for a discussion as to whether they should be allowed to continue with the pregnancy. On the day of the demonstration, we had difficulty in convincing the physicians that these patients had mitral stenosis—the murmurs had become so distant and faint. And yet we considered these patients sufficiently menaced to advise, in the one case, interruption of the pregnancy with sterilization, and, in the other, delivery by cesarean section with sterilization.

FUNCTIONAL CAPACITY OF THE HEART

Having once determined upon the diagnosis, one is next confronted with the problem of the functional capacity of the heart muscle. We have found that, whereas the cardiogram and the roentgenogram will give confirmatory evidence as to the type of lesion, they give us little information as to the capacity of the myocardium to withstand the strain of pregnancy and labor. The signs of a failing myocardium are dyspnea, rising pulse and respiratory rate, and edema. Various exercise tests, diuresis tests for latent edema, and vital capacity determinations have been thought of and tried in an attempt to find some short cut to determination of the insufficiency. They have seemed to us totally inadequate, and have been discarded in favor of frequent periodical examinations. Because there is a certain amount of edema in uncomplicated pregnancies, this symptom must be carefully evaluated and contrasted wherever possible with former pregnancies. Digitalis therapy is instituted as soon as the first signs of decompensation appear. By digitalization and regulation of activity the patient can be safely brought to the delivery table and goes through her labor quite satisfactorily. She is of course advised not to become pregnant again and is, wherever possible, sterilized.

PROGNOSIS

Pregnancy then must always be considered as an element of unknown danger to the mother with a diseased heart; conversely the mother with a diseased heart is, under certain conditions, a source of known danger to her unborn child. This interesting question of the effect of an inadequate cardiovascular system on the fetus was suggested to us by the three cases of fetal death in the group. One patient who had a spontaneous abortion was twenty-seven, and had had her first child in our obstetrical clinic three years previously. The lesion was a well-compensated mitral stenosis without insufficiency. She had had three attacks of chorea at 8, 12 and 13, and one attack of rheumatic fever at 12. There was no electrical evidence of myocardial damage, but her pulse rate was always 64 or less, and her blood pressure 100/60 or less. She complained only of fatigue, and her whole demeanor was always one of extreme lassitude. The second of these patients, whose baby was born dead at term, had a well-compensated mitral stenosis with insufficiency and no difficulty during her pregnancy, but had to be transfused following delivery, which was easy and otherwise uncomplicated. Her complaint, too, was fatigue, and she had consistently a low blood pressure and sinus bradycardia. She developed fainting attacks postpartum, and had to be kept in bed for months. There was electrical evidence for slight myocardial damage. The third came to us in the eighth month of pregnancy, showed the bradycardia and hypotension already referred to, suggestive electrical evidence of myocardial damage, and was delivered of a premature baby. We feel that in each instance the fetal death was directly attributable to an inadequate maternal cardiovascular system. As far as prognosis is concerned, we should like to add that, just as dyspnea, rising pulse and respiratory rate are signs of danger to the mother, so are fatigue, bradycardia, and low blood pressure signs of danger to the fetus.

COMMENT

In conclusion we would suggest:

1. That diagnostic criteria for cardiac conditions in the pregnant woman could be improved by a more accurate study of the causation of murmurs—a study for which the alteration of the murmurs might be used as a point of departure;

2. That no type of exercise test so far devised can take the place of frequent periodic observation by the internist, begun early and carried on throughout pregnancy; and

3. That the type of cardiovascular system giving rise to fatigue, bradycardia, and low blood pressure in the mother should be regarded as inimical to the fetus.

Box 585, Santa Barbara.
490 Post Street.

DISCUSSION

Saxton T. Pope, Jr., M. D. (450 Sutter Street, San Francisco).—Most attempts to estimate the hazard of pregnancy in the presence of organic heart disease have been limited to a consideration of the immediate maternal and the fetal mortality. Inquiry, however, cannot be rested at this point. One ought to consider depletion of the myocardial reserve or delayed maternal mortality.

It is regrettable that present methods of medical investigation do not include any which reveal adequately the true myocardial state. Doctors Richter and Rickard have indicated the insufficiency of evidence to be derived from roentgen and electrocardiographic data, and have expressed their preference for periodic physical examinations. At such examinations signs of impending or actual congestive failure are sought. If elicited, the patient is prepared for and supported through parturition by digitalis. With care and good fortune, this can often be accomplished successfully, as the statistics prove.

This fact, alone, is reassuring to know; although it does not dispose entirely of the subject, "Pregnancy as a Complication of Heart Disease." One wishes it were possible to determine the exact loss in myocardial reserve to the mother of child-bearing in the presence of organic heart disease, to acquaint her with it, and to leave the decision with the person to whom it properly belongs.

Alice F. Maxwell, M. D. (University of California Hospital, San Francisco).—Heart disease is no small factor in modifying maternal and child welfare. According to Williams, the incidence of organic heart disease among pregnant women ranges from one to two and five-tenths per cent, with a resultant maternal mortality of approximately two per cent. During the child-bearing period, from 18 to 43 years, rheumatic fever accounts for about 90 per cent of all heart disease. Syphilis, scarlet fever, diphtheria and other forms of sepsis are not infrequent precursors of cardiac pathology. Congenital heart lesions and cardiac disease, secondary to essential hypertension and arteriosclerosis are relatively uncommon in women during their reproductive years. The authors have pointed out that the physiological alterations of the circulation during pregnancy may offer a confusing picture. The upward displacement of the diaphragm, the rotation of the great vessels, the development of the fetal and placental circulation cause definite clinical signs; the apex is shifted laterally and upwards, the right border of the heart is displaced, the heart rate is increased and systolic murmurs are often heard at the mitral or pulmonic areas, and are not transmitted beyond the cardiac borders.

Even in the presence of definite organic heart disease the recognition of cardiac insufficiency may not be a simple matter unless the individual is carefully and frequently examined. The earliest symptoms of circulatory failure are dyspnea on rest or after slight exertion, palpitation, orthopnea and extreme fatigue, and proper treatment instituted at this stage may prevent decompensation and restore the circulatory balance. The appearance of pulmonary and hepatic congestion, anasarca, hypotension and exhaustion indicate that the mild initial circulatory failure has progressed, the cardiac reserve is exhausted and the prognosis is unfavorably modified. Fortunately, in the modern clinic in which there exists the closest coöperation between the obstetrician and the cardiologist, and in which prenatal supervision is instituted during the early months of pregnancy, preventive measures have served to reduce the incidence of broken compensation.

The improvement in the methods of diagnosis, the early recognition and prevention of a circulatory breakdown, have favorably influenced the prognosis and reduced maternal mortality.

The obstetrician must determine the method of delivery which will afford the least strain upon the individual; in the presence of decompensation no attempts at delivery are permissible, and instead, every effort should be directed toward restoring the cardiac balance by appropriate medical treatment. The method of delivery must be individualized. Premature delivery will occur in from 15 per cent to 30 per cent of pregnant women with cardiac disease; the fetal death rate is about 17 per cent. The maternal mortality even under the most careful management averages from four to six per cent.

The authors have emphasized the importance of rheumatic fever and infections as causes of organic cardiac lesions. The prevention of these infections, therefore, is a vital prophylactic measure.

⁂

William J. Kerr, M. D. (University of California Medical School, San Francisco).—This paper reminds us that the strain of pregnancy is a great one on the cardiovascular system, and that the life of both mother and child may be in jeopardy during this period. The old maxim, "There are few cardiac lesions which contraindicate pregnancy," does not require revision. Pregnancy occurs at a period of life when degenerative processes are predominant, and congenital lesions of extreme degree have already terminated life or incapacitated the sufferer. This leaves the few subjects whose hearts are permanently damaged by diphtheria; a larger number who have thyrotoxic disorders of the circulation, and the very large group of cardiac cripples with rheumatic involvement. In the first two groups it may be necessary to terminate the pregnancy early in order to save the mother, if the functional capacity of the heart shows any sign of failure. In the rheumatic group a marked mitral stenosis; a combination of mitral and aortic lesions; or the onset of grave disorders of rhythm with or without congestive failure call for prompt emptying of the uterus. In many cases of these types the chance of premature death of the fetus is very great. Following the termination of an otherwise uneventful pregnancy, there may be cardiac failure or death from a cardiovascular accident (embolism, congestive failure, grave disorders of rhythm, etc.). Constant observation during pregnancy will usually help the physician to decide when to act. Sterilization of the cardiac cripple should be practiced more frequently.

CLINICAL TETANUS[*]

A STUDY OF ONE HUNDRED AND THIRTY-ONE CASES

By Hyman I. Vener, M. D.
A. G. Bower, M. D.
and
J. E. McKillop, M. D.[†]
Los Angeles

I

In order to contrast the results obtained in the treatment of a series of tetanus cases managed in a single institution with those obtained in the state at large, statistics were secured from the California State Department of Public Health. Assuming the Tehachapi Range as the dividing line between the northern and southern parts of the state, there were a total of 841 cases reported from January, 1916 to September 1, 1931. Of this number, 340 cases, or 38 per cent, occurred north of the range and 501 cases, or 62 per cent, were south of the range, or in Southern California. Included in the latter group were 345 cases for the county of Los Angeles, a part of which was segregated for particular study, and forms the basis of this paper in a later section.

Quoting the Department of Public Health, Table 1 represents the number of tetanus cases,

Table 1.—*Number of Tetanus Cases in California.*

Year	Cases	Deaths	Per Cent Mortality Rate
1923	55	43	78
1924	66	48	73
1925	71	54	76
1926	65	40	61
1927	58	40	69
1928	82	64	78
1929	70	45	64
1930	72	52	72
1931 (to Sept.)	26	18	69

---

[*] From the contagious department of the Los Angeles County General Hospital, Unit No. 1. Service of Doctors McKillop and Bower.

[†] Dr. J. E. McKillop died on July 25, 1932.

TABLE 2.—*Analysis of Tetanus Histories. (California State Department of Public Health.)*

Year	1923	1924	1925	1926	1927	1928	1929	1930	Totals
Nail and wire puncture wounds	9	19	14	15	21	21	12	15	126
Splinters	6	6	4	7	2	13	7	2	47
Lacerations received in automobile accidents	1	3	2	2	1	5	2	2	18
Compound fractures and wounds from crushing injuries	5	7	10	4	2	6	3	8	45
Firearms and firecrackers	2	0	2	1	4	1	3	2	15
Abortions	0	2	1	2	1	2	2	0	10
Surgical operations	1	1	0	3	2	1	2	5	15
Open wounds	4	2	4	10	10	1	2	1	34
Burns and blisters	1	0	1	0	2	4	5	6	19
Umbilicus	9	5	4	4	3	4	3	4	36
Smallpox vaccination	0	3	1	0	0	0	0	0	4
Wounds from falls	0	3	1	2	1	0	3	4	14
Drug addicts	1	6	1	0	1	2	0	0	11
Miscellaneous lacerations	7	0	15	7	4	19	15	12	79
Unknown	6	7	8	8	4	3	10	10	56
Total histories received	52	64	68	65	58	82	69	71	529
Total cases reported	55	66	71	65	58	82	70	72	539
Total deaths	43	48*	54*	40*	40*	64*	45*	52*	386

* Total number of deaths from histories; State Registrar coded some of these deaths as due to other causes, such as automobile accidents, criminal abortions, etc.

taken from case histories, reported each year from 1923 to 1931, and the respective mortality rates. The average mortality rate from 1923 to September, 1931, is approximately 72 per cent. For the period of 1916 to 1923 inclusive, the reports were incomplete, often showing a greater death rate than cases.

In 1923 the Department of Public Health began to request histories of cases of tetanus. Since that year the recorded annual tabulations represent the number of fatal cases, based on the statement of physicians from the histories, instead of the records from the Federal Census Bureau of the Bureau of Vital Statistics of the Department of Public Health, as used previously.

The official causes of deaths were compiled according to the rules of the United States Census Bureau for the interpretation of the relation of the contributory and immediate causes of death. Under these rules, a death from tetanus resulting from an automobile accident is considered a death from accident. Therefore the tabulations of deaths taken from the physicians' histories represent the actual number of cases of tetanus resulting fatally, irrespective of the circumstances causing the infection. Consequently, the fatality rates for California are higher than those based on the official death records published by the Federal Census Bureau.

It will be noted that in Table 2 the average mortality rate is approximately 72 per cent for all cases reported for the period of 1923-1930, and is an analysis of tetanus histories received from the California State Department of Public Health.

The remainder of this paper represents a study of an analysis of our series of 131 cases treated at the Los Angeles County General Hospital, Unit No. 1.

Prior to March, 1924, all tetanus cases were admitted to the various general medical wards of the Los Angeles County General Hospital for treatment. Subsequently this policy was abandoned, and all cases thereafter were transferred to the communicable disease service, so that standardization of treatment might receive consideration, with a view to lessening mortality; and because daily experience in intrathecal and intravenous therapy made standardization more easily possible on this service.

ETIOLOGY

Possibly due to lack of great seasonal variation in temperature, no relationship between season and case incidence seems to occur in this climate. In the winter there were thirty-four; spring, thirty-six; summer, thirty-eight; and the fall, twenty-three cases.

Table 3.—*Exciting Factors.*

	Number of Cases	Per Cent Series
Puncture wounds	46	35
Abrasions, lacerations	23	17.5
Splinters	17	12.9
Crushing injuries	5	3.8
Postoperative	7	5.3
Compound fractures and infections	3	2.2
Gunshot wounds	2	1.5
Auto accidents	4	3
Stones	3	2.2
Glass	2	1.5
Harpoon	1	0.76
Fish hook	1	0.76
Unknown	17	12.9

Table 5.—*Age Period Classification.*

Ages: Years	Number of Cases	Per Cent Series
Neonatal	2	1.5
1- 5	15	11.4
5-10	53	40.4
10-15	19	14.5
15-20	10	7.6
20-25	4	3.0
25-30	4	3.0
30-35	5	3.8
35-40	3	2.3
40-45	6	4.5
45-50	3	2.3
50-55	2	1.5
55-60	0	0
60-65	1	0.75
65-70	2	1.5
70-75	2	1.5

Sex.—There were ninety-nine cases occurring in the males, and thirty-two cases in the females, a ratio of practically three to one. The mortality rate showed a moderate difference; for the males there were 49 deaths and 47 recoveries, or 51 per cent; while for the females there were 22 deaths and 13 recoveries, or a death rate of 62.9 per cent. Although the incidence of tetanus in the male sex for this series is three times as great, the comparative mortality rate is approximately 12 per cent less than in the female.

Wounds.—Puncture wounds far exceeded all other types of injury, making 35 per cent of the whole series. Abrasions, lacerations, and splinters, in the order named, were the next most common types of injury. The foot was the commonest site of injury, causing sixty-nine cases, or 52.9 per cent; then the leg, with eleven cases, or 8.3 per cent. In seventeen cases, or 12.9 per cent, no history or evidence of any trauma was obtainable. (Cf. Tables 3 and 4.)

Table 4.—*Sites of Injuries.*

	Number of Cases	Per Cent Series
Foot	69	52.6
Hand	17	12.9
Leg	11	8.3
Forearm	3	2.2
Face	3	2.2
Umbilicus	2	1.5
Back	2	1.5
Unknown	17	12.9
Postoperative: Uterus	3	2.2
Resection of femur	1	0.76
Appendix	1	0.76
Hernia	1	0.76
Teeth	1	0.76

An interesting fact is the occurrence of seven postoperative cases. Three cases, or 2.2 per cent, followed surgery of the uterus, which may have been due either to faulty suture material, or to the possible harboring of the organism within the body, which was awaiting a favorable time for its multiplication through auto-inoculation with resultant tetanus. Whatever the cause, 5.3 per cent of all the cases of tetanus seen followed surgery upon nontraumatized, or so-called clean cases.

Age.—In this series, 40.4 per cent were found to be between five and ten years of age, while in the group from ten to fifteen years, there were but 14.5 per cent. Following are the number of

Table 6.—*Patients Admitted to Hospital.*

Year	Number of Cases
1916	1
1917	2
1918	1
1919	13
1920	8
1921	9
1922	8
1923	13
1924	10
1925	12
1926	10
1927	8
1928	16
1929	17
1930 (to July 1)	3

Table 7a.—*In General Medical Wards.*

Year	Deaths	Recoveries	Per Cent Mortality
1916	0	1	0
1917	1	1	50
1918	0	1	0
1919	9	4	69.2
1920	4	4	50
1921	6	3	66.6
1922	5	3	62.5
1923	6	7	46.1
1924	1	0	100
Totals	32	24	

Table 7b.—*In Contagious Unit.*

Year	Deaths	Recoveries	Per Cent Mortality
1924	4	5	44.4
1925	7	5	58.3
1926	4	6	40
1927	5	3	62.5
1928	10	6	62.5
1929	6	11	35.2
1930 (6 mo.)	2	1	66.6
Totals	38	37	

cases compiled by ages in periods of five-year intervals.

INCIDENCE

The annual incidence shows that the number of cases admitted to hospital is increasing. In the past five years there were sixty-six cases as compared with forty-eight for the period of 1920 to 1925, or an increase of 42.1 per cent. For the period of 1916 to 1920, there were only seventeen. (See Table 6.)

MORTALITY

A review of the mortality rate on the several different services does not show a pronounced variation. On the general medical wards the mortality rate was 57.1 per cent, while on the contagious service the rate was 52.0 per cent; or a decrease of 5.1 per cent. (See Table 7.)

Considering next the relationship of age to the mortality rate, it was noted that the rate was approximately 53 per cent for the first twenty years; that between twenty and twenty-five years there were no deaths; and that between twenty-five and thirty there was a mortality of 50 per cent; while between thirty and thirty-five the rate was 33 per cent. Between the ages of forty and sixty there was an increase in the death rate to 77 per cent; while above sixty the mortality rate was 100 per cent. (See Table 8.)

Table 8.—*Age Periods in Relation to Mortality Rates.*

Ages	Number of Cases	Deaths	Recoveries	Per Cent Mortality
Neonatal	2	1	1	50
1- 5	15	8	7	53.3
5-10	53	31	22	58.4
10-15	19	10	9	52.6
15-20	10	5	5	50
20-25	4	0	4	0
25-30	4	2	2	50
30-35	5	1	4	20
35-40	3	1	2	33.3
40-45	6	4	2	66.6
45-50	3	2	1	66.6
50-55	2	2	0	100
55-60	0	0	0	0
60-65	1	1	0	100
65-70	2	2	0	100
70-75	2	2	0	100

INCUBATION PERIOD AND MORTALITY

The following table shows the approximate period of incubation in days, and the mortality rate for each period. Attention is invited to the fact that cases occurring within five days after injury have much the highest mortality. (See Table 9.)

Reason for exclusion of four of these cases was because they were admitted very late in the course of the disease, and a history was too indefinite for accurate data.

In considering the variation between the sexes, with regard to the relationship between the period of incubation and the mortality rate, only cases occurring within twenty-five days were included; and care was taken to exclude all cases in which the incubation period was unknown. Such an analysis shows a total death rate of 52.1 per cent for the males as against 65.2 per cent for the females; or an increase in the latter of 13.1 per cent over the males.

(To be continued)

Table 9.—*Incubation Periods.*

Number Days Incubation	Number of Cases	Deaths	Recoveries	Per Cent Mortality
1- 5	17	11	6	64.6
5-10	47	28	19	59
10-15	19	9	10	47.3
15-20	8	4	4	50
20-25	4	0	4	0
25-30	4	4	0	100
Unknown	32	15	17	46.9

COMMITMENT LAWS IN CALIFORNIA AND ELSEWHERE*

By Glenn Myers, M. D.
Los Angeles

Discussion *by Herman Adler, M. D., Berkeley; Clifford W. Mack, M. D., Livermore; Charles Lewis Allen, M. D., Los Angeles.*

Time and space permit only brief mention of the inheritance of our commitment laws from old England. For a detailed account the reader is referred elsewhere.[1] The attitude of the holiday crowds at Bedlam still exists in some degree in relation to our State hospitals. The justified distrust of the unlicensed and unsupervised private institutions in old England, where doubtless many persons were held unjustly, is still reflected in the prevalent, albeit absurd, ideas about "railroading" of patients at the present day. Understanding of mental disorder has developed but slowly until recent years, and lack of knowledge tends to breed superstition, distrust and erroneous concepts.

Under the English law, anyone could arrest a person thought to be insane, and confine him until his mental condition could be determined by judicial procedure. It was intended that arrest and confinement be performed in a humane manner, yet it was regarded proper to "bind and beat" the person if deemed necessary. Judicial proceedings were to be instituted as quickly as possible after arrest.

In America legislation developed only slowly out of the conditions of the times. There were at first no institutions to which mental patients could be sent. The insane of people of means were cared for in their homes; the indigent insane, if harmless, were permitted to wander throughout the country. The term "insane" applied only to those persons who were dangerous to health, person or property. The overseers of the poor generally were granted authority to place such persons where they could be cared for most conveniently. Custody and care were regarded essential, not to the insane persons, but to the welfare and safety of the community. They were cared for in cages or pens in county houses, or were placed in jail or bid off at auction to persons who were prepared to assume charge of them at the lowest figure. There was no written law applying to them for many years.

In nearly every state the earliest statute enacted was brought bodily from one of the older states. One of the earliest records in reference to the insane is from Rhode Island, dated November 11, 1650, and contains an appeal to the Town Council in behalf of one Mrs. Wilson, "a distracted person," and concludes with the remark: "We know not how soon we ourselves may be deprived of our reason, except mercy of ye God of Mercies prevent it." In 1694, we find "An Act for the Relief of Idiots and Distracted Persons," allocating their care to the selectmen and overseers of the poor. In 1714, a similar act empowered the justices of the peace to put insane persons to any work or service of which they were capable. In 1725, the inland towns were empowered to build houses of correction for vagrants "and to keep mad persons." The first reference to determination of insanity is found in a law of 1736 giving power to the judge of probate, on the request of friends or overseers of the poor, to direct the selectmen to make inquiry and the judge to collaborate in the final decision. In the same year the "Publick Workhouse and House of Correction" was made available to the insane in New York. It was enacted that "Whereas there are persons who by lunacy or otherwise are so furiously mad and so distracted in their senses as to be dangerous to go abroad, it shall be lawful for two or more justices of the peace to cause to be apprehended and locked up such persons in some secure place, and if necessary chained there." In 1786 one Mary Weed stated that her husband had been kept chained for twenty years because of insanity. In 1793 "a suitable place, the county jail if necessary," was substituted for the workhouse. Four years afterward, confinement in jail was disallowed. By 1824 there was still further improvement in provisions for the dangerously insane, but provisions for the harmless insane came only much later. By 1845 it was not regarded essential that the insane person should have committed actual violence, to justify confinement. Frequent recurrence of insane acts without motive sufficient to actuate persons of ordinary sense was regarded sufficient evidence of mental disorder. The legal principle continued that an insane person could be deprived of his liberty only if restraint was necessary or beneficial and was authorized by a court. Confinement in hospital was permitted only for medical treatment, and confinement terminated with the end of the emergency.

In 1773, Virginia provided the first state hospital to be used exclusively for the insane. Dorothea L. Dix, in the forty years of her public work from 1841, was instrumental in founding or enlarging more than thirty state institutions for the better custody and treatment of mental patients. It was only after 1870 that the presentation of certificates of insanity, by physicians of recognized responsibility, was regarded essential to commitment procedure throughout the United States.

Under the old English law, trial by jury was not regarded essential in determination of insanity, nor was it in the older states. It was found that the judge could act with equal or greater wisdom, with less delay and without interfering unduly with the liberty of the individual. Jury trial has often resulted in error and has not constituted a safeguard to the liberty of the individual or the safety of the community. It has been contended that unless the insane are committed by jury trial they are restrained of their liberty without due process of law, but "due process of law" means the law of the land, and any law properly placed upon the statutes must be considered "due process of law."

---

* Read before the Neuropsychiatry Section of the California Medical Association, at the sixty-second annual session, Del Monte, April 24-27, 1933.

The care of insane patients in counties originated when no suitable facilities existed for their care elsewhere. They were placed in almshouses in preference to confining them in jails, or in pens or cells at home. By "state care" is meant the care of the dependent insane, exercised by the state and not in any way under the management of town or county officials. Delaware was the first state to establish state care, through an act of 1889. In a few states mixed state and county care existed from the beginning. In Wisconsin, county care was adopted as the principal policy of the state, in conjunction with two state hospitals. The consensus of opinion is that state care is preferable to any system of county care, however excellent. The development of state care was slow and every one of the older and more conservative states attained it only after severe struggle. The rapid growth of the newer western states, which at first had no efficient county and township organization, necessitated state control.

EARLY COMMITMENT LAWS OF CALIFORNIA

From the beginning, California has made the care of the insane a state responsibility. There are no city hospitals for the insane. There is no county care as such, except in Los Angeles and San Diego counties under the Psychopathic Parole Act. The first general law relating to the insane was enacted May 17, 1853, in which year the first state hospital for the insane was opened. It provided that any county judge, upon application by any person under oath setting forth that any person by reason of insanity was unsafe to be at large, or was suffering from mental derangement, should forthwith cause such person to be brought before him and cause to appear two reputable physicians to examine such alleged insane person, and if they found such person to be insane to certify under oath that the charge of insanity was correct, and if the judge was thereupon satisfied that the insane person was unsafe to go at large he should order him placed in an insane asylum in California. Costs of transportation of patients to the asylum were to be borne by the state. In the following year, however, it was provided by law that the counties should pay the expense of such transportation; and that is the present provision of law. It nevertheless became the custom for the state to reimburse the counties on the basis of a fee system for the sheriffs' services in the function of such transportation.

The commitment laws remained essentially unchanged until 1897, when the attempt was made to establish detention quarters for mental patients outside of jails proper and to make commitment more a medical than legal procedure. Some provisions of the amendments were attacked and declared unconstitutional and little further change has since been made. In 1921 the State Department of Institutions took over the duties previously exercised by the Lunacy Commission. The asylums of California have long since become "state hospitals," but the commitment laws provide essentially the same accusatory, criminal-law type of proceedings that was customary in the early history of the United States. While California has kept stride with other states in the development of fine, well-conducted state hospitals for mental patients, similar progress has not been made in the provisions for commitment. There have been opposing factors, such as the opposition by the Sheriffs' Association against depriving them of the function of transportation, based upon benefits derived from the pernicious fee system. Organized attack upon the existing law has been only sporadic and poorly sustained. California is geographically remote from those progressive states which have made notable changes in commitment procedure, and has lacked the stimulation that geographical proximity would bring. Various states, through the persistent efforts of individuals and groups, have effected marked improvements. It is evident that once such a movement is well started, it tends to continue in some extent on its own momentum and requires less effort to sustain its progress. Custom plays its part, progress having a certain momentum just as lack of progress persistently resists change. The majority of the states continue to be tardy in enacting provisions of law advantageous to the patient in the important period of the commitment procedure; yet it is gratifying that here and there, over the entire United States, one or another of the tardy states is making the effort to bring commitment procedure into accord with modern concepts of mental illness. In the progressive states, custom has in instances outdistanced the law, inasmuch as statutes remain in existence merely because their provisions are disregarded and better procedure is practiced which may or may not actually be found in the law.

COMMITMENT LAWS OF OTHER STATES

Much was learned of the conditions in California through a mental hygiene survey made in 1930.[2] Much advice has been had from individuals and groups in California and in other states. The National Committee for Mental Hygiene has made available unpublished data.[3] Copies of the laws of other states have been obtained wherever available. Time and space will permit only a brief summarization of commitment procedure in other states.

In the majority of the states anyone may institute proceedings leading to the commitment of a mentally disordered person. At least eight states permit only designated persons to institute such proceedings, such as a blood relative, health officer, or other public officer. While it would ordinarily be proper that only someone having a responsible connection with the mentally disordered person should be permitted to act as petitioner, sometimes such person is not available, and sometimes relatives are blind to the abnormalities existent and some one must act for the benefit of the patient.

Fourteen of the states permit detention in jail pending inquiry into the patient's mental condition, and six states permit detention in lock-up or prison when the patient is violent. One state provides for commitment to prison if the state hospital has not facilities at the time adequate for the control of the violent person. Several of the states provide the best of hospital and medical facilities for the interval of prestate hospital detention, and a tendency is apparent over the entire country to deal with mental patients in a humane manner.

Some of the states continue to require that the person shall be dangerous to health, person or property in order to be committable. This shows the persistence of custom established at a time in the history of our country when facilities for medical treatment of mental patients not only were nonexistent but probably were little in mind, and the "insane" were only those persons who were violently insane. Those states which have made most progress have provided very liberal opportunities for any mentally ill person, who is in any extent in need of hospital treatment, to get such treatment in the state institutions.

At least one state requires delay in commitment procedure until the next session of the court, the patient meantime being held in jail or other custodial quarters without provisions for treatment. The progressive states have done away with such obstacles to the prompt admission of the patient to the state hospital, for the benefit of early treatment with proper treatment facilities.

All states provide for medical examination and certification by at least one physician; nearly all the states by two physicians; and several states specify high qualifications for these medical examiners.

All the states provide for commitment to state hospitals for the insane. Twenty states provide for commitment of mental patients to licensed private institutions. Some states provide for commitment to county institutions. At least two states provide for commitment to detention hospitals. Those states which have psychiatric institutes usually have special provisions for admission of patients to those institutions.

The majority of the states continue to permit the sheriff to transport the patients to hospitals after judicial procedure. Three states provide that attendants from the hospitals to which patients are committed shall perform the function of transportation, when not performed by the relatives of the patients. One state provides for transportation by "a suitable person, preferably a relative or friend." In one state transportation is effected by court officers with special training. In three states transportation is carried out by relatives of the patient, and a court officer functions in that capacity only when the patient is violent. In one state the overseer of the poor is responsible for transportation. There has been the general tendency in progressive states to eliminate the sheriffs from this function, especially where the sheriffs make free use of handcuffs and generally treat the patients as criminals rather than as sick persons.

VOLUNTARY ADMISSION, OBSERVATION, TEMPORARY CARE, EMERGENCY

Quoting from an unpublished committee report[3] of 1930, made by three eminently experienced psychiatrists from the United States and six others from as many foreign countries: "Data received from the countries outside the United States indicate that all apparently make some provisions for the commitment of definitely insane persons to institutions. Seventeen of the countries replying to the questionnaire also provide for the voluntary admission of patients; nineteen for commitment for observation; eight for temporary care and study without commitment; and seven for commitment as an emergency measure. In the states of the United States, thirty-four allow the voluntary admission of patients; seven provide for commitment for the purpose of observation; fifteen provide for temporary care without formal commitment; and eighteen provide for emergency commitment." This committee recommended in part: "Admission to a mental hospital for treatment should be made as informal as the constitution and laws of the country will permit. To this end we recommend that jury trials on the issue of insanity for commitment be abolished; that the voluntary admission of patients who are seeking treatment and who are competent to make such application be encouraged, and that those states which do not have such laws be urged to adopt them. Laws also should be adopted as speedily as possible for the temporary care and study without formal commitment of patients upon the recommendation of a physician, as well as for the provision for the commitment of patients for a period of observation." It is to be observed, in connection with the recommendations of this committee, that California has provision for voluntary admission, which is not as extensively exercised as might be desired, and no provisions for commitment for observation, commitment as an emergency measure, or temporary care and study without formal commitment.

COMMENDABLE PROVISIONS OF OTHER STATES

Delaware has established a psychiatric observation clinic in the state hospital, to which any physician licensed to practice medicine in the state may, at his request and without further steps being necessary, effect the admission of a patient for four weeks' observation, study and diagnosis. The patient cannot leave without permission of the superintendent of the hospital. An extension of the observation period may be had if indicated. If commitment is decided upon, a commission of two physicians commit the patient to the state hospital, or commitment is by jury if requested by relatives or friends. The patient may or may not be present at the commitment proceedings.

Maine provides for: (*a*) Voluntary admission. (*b*) The compulsory hospitalization of minors within thirty days after the onset of a psychosis, without legal examination, to either a private or state hospital. (*c*) Upon the certificate of two qualified physicians, an alleged insane person may be committed to a state hospital for observation, under such limitations as the judge may direct, pending a determination of his insanity. (*d*) A person may be committed to a private mental hospital on the certificate of two physicians for a period of thirty days, within which time he shall be discharged if further treatment at such hospital is not necessary. If further treatment is indicated, he shall be examined by two disinterested physicians and, if they find such further treatment necessary, the head of the private hospital shall make application for hearing before the end of the thirty-day period. The patient may be present if he wishes, unless injurious to his health or dangerous to his welfare, and shall have the right to be represented by relatives, friends, guardian, or lawyer. The judge may require further evidence. If satisfied that the person will require further treatment, the judge may commit the person to the private hospital, to be detained until he has improved sufficiently to be released or other disposition is made of his case.

Massachusetts has long been outstanding in facilitating the admission of patients to state and private hospitals. It provides for voluntary admission, emergency commitment, temporary care, and commitment for observation.

New Jersey has successfully tried the use of centers, where patients may be detained for sixty days for observation and classificatioon.

New York permits: (*a*) voluntary admission; (*b*) admission on the petition of a relative and examination by one physician, to hold for ten days after notice of desire to leave; (*c*) admission on request of a health officer, to hold for not exceeding thirty days; (*d*) emergency admission for a period not to exceed ten days; and (*e*) judicial commitments. For the first four, no court order is necessary. To those persons who believe that "railroading" exists, the statement of Dr. Frederick Parsons, Commissioner of Mental Hygiene, should be enlightening: "In New York State approximately twelve thousand persons are admitted each year. In the thirty years in which I have had intimate knowledge of the admissions, I have never known of a patient being sent to an institution as the result of a conspiracy. The belief that patients are 'railroaded' is nonsense."

The commitment laws of Pennsylvania are particularly commendable. The term "insane" in the statutes has been supplanted by the term "mentally ill." The following methods of admission apply to either state or private institutions: (*a*) Voluntary admission. (*b*) Admission on application of relative, friend or other responsible citizen, and the certificate of two qualified physicians. (*c*) Upon application by a responsible person and the verified petition of two qualified physicians, the court may hold a proceeding anywhere, with or without the presence of the patient, through which the patient may be placed and detained in a mental hospital. (*d*) Emergency admission, without commitment, for a period of ten days, upon application by a responsible person and the certificate of at least one licensed physician. The superintendent may cause the patient to be removed if temporary care is not indicated. If further care is required, legal commitment or admission as a voluntary patient is in order before termination of the ten-day period. (*e*) The superintendent of a hospital may receive and detain a violent or dangerous mental patient, or for other emergency, not to exceed ten days, on the certificate of two qualified physicians. Within ten days, proceedings are to be instituted for judicial commitment. (*f*) Upon application for observation, diagnosis and treatment, and the certificate of two qualified physicians, or in his own discretion without such application, the judge or court, if satisfied, shall commit the person for such period and under such limitations as the judge or court may direct. The superintendent shall submit a written report of the patient's condition before the expiration of the period of commitment, and the judge or court shall order the further disposition of the patient.

In Rhode Island about half the number of patients are admitted without judicial procedure; the next friend of a psychotic patient filing with the State Welfare Commission an application, together with the certificate of two physicians. Upon this evidence the Commission may authorize the state hospital to receive and care for the patient. Commitment is for as long as the patient may require.

EXISTING COMMITMENT LAWS OF CALIFORNIA

The present commitment laws in California[2] are based upon the assumption that a person with mental disorder, to be committable, must be dangerous to health, person or property. Commitment is mainly a legal procedure to provide custody for the patient and safety for the community. The medical aspect of commitment, which emphasizes hospitalization as treatment, is given little consideration. A complaint of insanity is made and a warrant is issued by a magistrate. The sheriff takes the person into custody and detains him in a "suitable place." The person is arraigned before a judge of the superior court, who sets the time for trial, telling him that he has the right to have counsel and to produce witnesses. The hearing is held in open court, and the patient must be present if physically able. If too ill to appear in court, the judge may hold the necessary proceedings at his bedside. The complaining witnesses must state before the patient their reasons for regarding him to be insane. Two physicians must be present to hear the testimony and examine the patient. Examination is usually made just previous to the hearing or at the hearing, and in many counties the best that can be said is that it gives the proceedings a slight medical coloring. If commitment is decided upon, the patient is turned back to the sheriff for transportation to the hospital.

The routine detention of patients for commitment procedure is shown to be more expensive than the more acceptable procedure of sending two qualified physicians to the home of the patient with avoidance of detention unless necessary. The "suitable quarters" provided in each county for detention of mental patients were found in 1930[2] to be, in twenty-eight counties, exclusively jails; in seventeen counties, jail-like facilities; in four counties, good hospital facilities; and in seven counties, good hospital facilities with examinations by medical staffs and the keeping of records. Two counties were not surveyed. Thus forty-five of the fifty-eight California counties used jails or jail-like facilities for the detention of mentally ill patients, a procedure tending to aggravate and prolong mental disorder.

The arraignment of mental patients is an absurd provision of law, as is the necessity for the presence of the patient in open court and the statements of his relatives in his presence. The medical examination should be better performed. After the legal proceedings, it is distinctly unwise to turn patients over to the sheriffs for transportation to the hospital, especially as it was found[2] to be still a common practice to handcuff patients en route to the hospital. The unintelligent handling of patients increases excitement and leads to such practice. Too many obstructions exist which delay hospitalization and treatment.

PROPOSED CHANGES IN CALIFORNIA COMMITMENT LAWS

Assembly Bill 539, passed by the California Assembly and referred to a Senate committee at the time of this writing, provides as follows: Application is made to a judge of the Superior Court, or in emergency to another magistrate or the county clerk, for medical examination of a person believed to be mentally disordered. Detention is to be exercised only when necessary. The use of jails for detention of mental patients is abolished unless held in connection with a criminal charge; and such detention quarters shall be in or connected with a hospital. The smaller counties may combine their facilities with little expense at a strategic point for such detention. Detention is authorized for a period not to exceed thirty days, permitting psychopathic wards with treatment facilities to return a number of patients to their homes improved or recovered without commitment. The absurd provision of arraignment,which aggravates mental disorder and delays hospital care and treatment, is eliminated. The hearing may be held at whatever place is best for the patient's welfare. The patient must be allowed to be present if he wishes; but since it may not be pleasant for patient or relatives to have statements about one's mental condition made in their presence, this is to be left more to the discretion of the judge and the wishes of the patient. Examination and verified report must be made by two qualified physicians. If commitment is decided upon, transportation shall be in charge of relatives of the patient or attendants from the hospital to which committed. The attendants may at other times be engaged in their regular duties. This is not only better for the patients, but more economical for the state.

The existing law makes no provision for the patient to remain at home during commitment procedure, unless too ill to appear in court. This bill permits commitment from the patient's home under the following provisions: Upon receipt of verified application and upon determining after inquiry that detention appears not to be indicated, the judge of the superior court may order two certified medical examiners to make joint examination of the patient, wherever he may be, and to return a verified report of their findings to the judge. If the examiners find the person mentally disordered and in need of hospital treatment, they shall inform the person that they have so found, that they will so report to the judge, that they will recommend commitment to a state hospital, and that the person or anyone in his behalf has the right, within one day from date of such notice, to file with the county clerk a demand for a hearing and examination before the court. If such demand is made, the hearing shall be granted. If such demand is not made, the judge, if satisfied with the petition and report of the medical examiners, may forthwith issue an order of commitment to a state hospital.

This bill also provides for the emergency that exists when a peace officer apprehends a dangerously insane person at a time when a judge is not available to authorize detention. It also provides that one of the medical staff of a psychopathic ward may file petition for examination of a person believed to be mentally disordered, without being civilly or criminally liable for such action.

The remedies proposed to correct the defects of the existing commitment procedure are admittedly not perfect or all-inclusive, but represent a distinctly foreward step.

1052 West Sixth Street.

REFERENCES

1. The Institutional Care of the Insane in the United States and Canada, Vols. I and II. The Johns Hopkins Press, Baltimore, Maryland. 1916.

2. The Mental Hygiene Survey of the State of California, Frederick H. Allen, M. D. California Printing Office, Sacramento. 1930.

3. Report of Committee on Legal Measures and Laws, the First International Congress on Mental Hygiene, Washington, D. C., 1930. Unpublished. By courtesy of the National Committee for Mental Hygiene.

DISCUSSION

Herman Adler, M. D. (Professor of Psychiatry, University of California).—It is a great privilege to be allowed to open a discussion of this excellent paper by Doctor Myers.

I want to open my brief statement with a word of appreciation for the untiring and idealistic efforts that Doctor Myers has put forth in the interests of improving the commitment laws in this state. Opposition and antagonism toward the present proposal developed in several quarters, as was to be expected and, in fact, as has characterized the history of the development of the modern scientific point of view in the field of psychiatry, a point which Doctor Myers, perhaps wisely, has not stressed in his paper.

With great skill and persistence and a tolerance which speaks well for the psychiatric method even in politics, Doctor Myers was able to win over, one by one, practically all the opposition, not by oratory and persuasiveness, but by the weight of evidence, and by clearly demonstrating that the proponents of this measure had no ulterior motives, and that their statements could be taken as given, without the suspicion of mental reservations or intellectual deviousness.

There remains only one group opposed to this legislation, and there is still time to remove its opposition.

This is a small group of sheriffs from a small number of counties. Some of the leaders in the sheriffs' organization, two of them representing two out of the three largest counties in the state, from the point of view of population, expressed themselves as in favor of this legislation.

The outline that Doctor Myers has given of the development of the commitment laws in these United States, and especially in California, gives a very concise picture of the direction in which changes have been tending, especially in this state, in the point of view that the general public has in regard to certain aspects of human behavior.

At the present moment, when the major attention of everyone is riveted upon the social and economic changes which to many have the appearance of cataclysmic suddenness—which it is very doubtful that they really possess—it is important for the physician to recognize that his profession bears evidence of a slow, laborious uphill climb from the time when medicine was restricted to the easily recognizable physical disorders. With the development of psychiatry and the recognition that it was possible to deal accurately with mental and behavior problems, medicine extended its interest beyond the plane of the body into the field of social problems. The treatment and care of the insane has been one of the earliest expressions of this widening interest, and the commitment laws embody this extension.

We are now faced by a condition in the world which is a challenge to the present generation. We cannot shut out the facts by denying them, or by an infantile feeling that "things will work out somehow by themselves," or that prosperity (by which most of us mean personal comfort and security) will return as the result of beneficent forces that work for our good. Social welfare can be achieved only by hard thinking and strenuous effort. We have known that sooner or later we must face this fact, and most of us realize that it is now and not later. We cannot leave social legislation to chance. The topic that Doctor Myers has laid before us in his paper is one which preëminently offers the opportunity to medical men to assist in the social reconstruction of the community and the state.

⁂

Clifford W. Mack, M. D. (Livermore Sanitarium). This is a timely subject and Doctor Myers has done well in presenting the matter so clearly and definitely with an abundance of factual material.

There is a pressing need in California for reformation in our methods of obtaining admission of mental patients to hospitals where they can receive adequate care. It is noteworthy, as Doctor Myers indicates, that there has been practically no modification in the commitment laws of California from 1853 to 1897, and no change since the amendment law at that time. In many other states of the Union, well considered reforms have been established. California, with its wonderful State Hospital system, should not be backward in the method of commitment. I am impressed also by the fact that the name "Lunacy Commission" was dropped only in 1921, and also that out of fifty-eight counties of the state, preliminary detention, in forty-five, is in jails or jail-like facilities.

The changes proposed in Assembly Bill 539 are based upon the principle that the insane are sick people and should be handled accordingly, and not put through the procedure that has been decreed by law for criminals. In other words, the mental patient is in need of medical care and deserves commitment on this basis if voluntary commitment is not accepted, rather than as the law exists today, commitment only because of danger to persons or property. The present law is based on police power of the state. The proposed changes would take cognizance of the medical aspects and needs of the sick person.

Almost all other states have a provision for commitment of patients to private institutions. This should be incorporated in the proposed changes of our commitment law. Psychiatrists in practice need a workshop in order that they may serve their patients well, just the same as a surgeon or medical man needs a well-equipped hospital. Unless there is a proper means of detention and custody in many instances, it is impossible to administer properly the psychiatric program required by the individual. There are many patients in the middle or upper economic levels who can pay for treatment in a private institution but who cannot be sent there by committing magistrates because of the existing law. A financial burden would be removed from the state funds and better regulation of the admission of patients to private institutions would be accomplished if commitment to private institutions were made possible.

The urge to prevent psychoses by means of early psychiatric treatment and hospital care cannot be fulfilled with our present cumbersome commitment law. A psychiatrist in practice hesitates a long time before recommending commitment, because he knows the objections that the family and patient will make when confronted with the ordeal. The statute as proposed by Doctor Myers gives us a safe, legal method of commitment with ample protection to the patient. It will make possible the treatment of psychoses in the early stages and thereby save many patients who now become chronic because of delay and neglect.

I urge upon every medical man serious consideration of this subject, to the end that proper influence may be brought to bear upon the legislative bodies.

⁂

Charles Lewis Allen, M. D. (214 South Lafayette Place, Los Angeles).—We are greatly indebted to Doctor Myers for his interesting review of the present situation of the laws regulating the commitment of the insane in California.

That this is unsatisfactory is not the fault of the doctors, but rather that of the legal profession and part of the judiciary (who have an unjustified fear that a change would imperil their interests), and also of a handful of officials who see profit in the present situation.

We psychiatrists have for years been urging that the California Medical Association stand behind us in working for the reform of the existing laws, but only recently have we succeeded in arousing even a lukewarm interest. The experience in other states has shown that administration of the measures having to do with the commitment and care of the insane can most economically and efficiently be placed under the charge of a state department, at the head of which stands a highly trained and experienced psychiatrist who commands the respect and confidence of the medical profession and can gain that of the laity.

Our progress toward reform has been greatly hampered by the opposition of the quacks and anti-medical faddists who flourish so luxuriantly in the benignant air of California, and who seem to have undue influence with lawmakers and in the courts. The president of a semi-charity professing to care for the "mentally sick" once said to me, "We don't want you doctors, with your pills and your powders; we cure our clients without." The cure proceeded nicely until several suicides occurred in rapid succession, since which they have looked with more tolerance toward the medical profession.

Most distressing to the relatives of mental patients are their having to swear out a complaint, seeing the victim arrested like a criminal (in some counties lodged in jail), having to confront him in court, and finally witnessing him lugged off, sometimes in handcuffs.

Dr. Richard Dewey not long ago wrote a paper upon the importance of the way in which the patient was transported and introduced to a hospital for the insane, emphasizing that the impression received at that time might play an important part in the future course of the case. The transportation should be in the hands of people naturally humane and accustomed to deal with mental cases. In Los Angeles the sheriff's office has gone some distance in this direction by picking out some experienced men and women to act in such matters, and they seem to accomplish their object with little friction.

The trial in court is an anachronism which has been eliminated in progressive states. A tragic affair is too often turned into a comedy through the ridiculous testimony of ignorant friends and neighbors, and this absurdity is raised to the nth power in the jury trial, frequently demanded, and which the court must grant.

To educate the public as to the necessity for reform, the medical profession must coöperate. We ask the California Medical Association to stand behind us in our drive for a modern "State Department of Mental Hygiene," or whatever you prefer to call it, which will have supervision of the mentally ill and which, while insisting upon a proper standard of care, will not oppress but rather support physicians interested in the private treatment of such unfortunates.

Doctor Myers' paper will furnish valuable aid in our efforts to effect the needed reforms.

*

Doctor Myers (Closing).—I have no further comment, but wish to express my thanks for the discussion of this paper, and particularly wish to express my appreciation of the widespread interest displayed throughout the state in the humanitarian objectives embodied in A. B. 539.

For the information of the readers who may not have learned the eventual fate of this bill, the following may be added:

Assembly Bill 539, with amendments, was passed with a wide majority by both houses of the State Legislature, but was vetoed by the governor at the request of representatives of the California Sheriffs' Association.

ASTHMA IN CHILDHOOD*

By Hyman Miller, M. D.
and
George Piness, M. D.
Los Angeles

Discussion *by Francis Scott Smyth, M. D., San Francisco; Edward Matzger, M. D., San Francisco; William W. Belford, M. D., San Diego.*

An attack of asthma in a child is only an episode in what is a long story, beginning with that child's forbears and to be continued throughout the child's life, even into the lives of his offspring. The story is never static, and only the long view of this present attack of asthma will give the physician a proper picture of the problem which he faces in getting the patient well. If, then, much is said here of symptoms other than asthma and of people no longer children, it is with the thought in mind that we are treating of a disease which is lifelong, hereditary, and many featured. This disease is known as the allergic constitution.

Before taking up the many ways in which the life of the patient may be influenced by this disease or describing its many features, it will be well to examine the nature of the allergic group as a whole. This should tell us how often we are apt to meet the allergic constitution in practice.

NATURE OF THE ALLERGIC GROUP

In July, 1925, a special clinic for allergic disease was founded at the Los Angeles Children's Hospital. All patients referred to this clinic first came through the general out-patient clinic where, from July, 1925 until January, 1933, a period of seven and one-half years, 41,000 cases of all types were admitted. Despite the fact that many cases of allergy undoubtedly were not recognized, and that a certain number did not enter, there were 1,411 children admitted to the allergy clinic. This is 3.4 per cent of all the children seen in the general out-patient department; in other words, of every one hundred children seen by the physicians, four were recognized as allergic. These four out of one hundred have a greater importance than their mere number would suggest. In going over some seven thousand case histories of allergy from both clinic and private practice, including both adults and children, it was found that 50 per cent began to have symptoms before the age of puberty. Therefore, the 4 per cent of children mentioned is one-half of all those who will at some time in life suffer from a more or less crippling sickness. It has been said (Cooke and Van der Veer [1]) that allergy occurs in 7 per cent of the general population. We may then conclude that, of the 8,400,000 allergic people in the United States, one-half, or 4,200,000, began to have symptoms in childhood.

A study of the nature of this group must include a study of the common belief that children tend to "outgrow" asthma. To speak of "outgrowing" a constitutional disease is as absurd as to speak of "outgrowing" blue eyes or Mongolian idiocy. We may only speak of a more or less permanent, spontaneous relief of symptoms. That this happens once in a while we know, but scientific proof that it is a general tendency in the allergic group is lacking. We may perhaps learn something of this from the histories of 731 patients first seen between twenty-one and thirty years of age. Of these, 731 patients, 175, or 25 per cent, began to have symptoms in childhood and had not "outgrown" them. Because those who do "outgrow" their symptoms do not visit the physician, we do not have the data to say that more than three out of every four children "outgrow" their symptoms. But with 4 per cent of all children, and 7 per cent of the general population known to be allergic, it appears to be likely that outgrowing really is but a temporary state of affairs.

The hereditary nature of the allergic group is well known. The allergic constitution is probably transmitted as a dominant Mendelian characteristic. In the 7,000 allergic patients examined, 58 per cent gave a positive hereditary history. This is more than matched by the report of the British Asthma Research Council,[2] which states that, of more than 1,000 children suffering from asthma, two out of every three had some relative or relatives affected.

DIAGNOSIS

Enough has been said of the nature of the allergic group to bring out the important fact that

---

* Read before the Pediatric Section of the California Medical Association at the sixty-second annual session, Del Monte, April 24-27, 1933.

we must see in the child suffering from asthma not just the present illness, but all the possibilities of illness which may later follow, and, paradoxically, the possibility of diagnosing asthma before asthma occurs. It is with this possibility that we next concern ourselves, using a certain amount of foresight with which the long view has armed us. Looking for this possibility, we shall consider various parts of the body.

Skin. — Allergic eczema is not always full-blown, widespread, unmistakable. Often it is merely a generalized or localized itching without any visible change in the skin. Or there may be only a slight roughness of the cheeks or a redness about the lips or buttocks, never passing beyond the stage of erythema. These also should be recognized as allergic eczema, for they often foretell the coming of asthma. Of the 3,995 asthmatics that we have observed, 772, or 20 per cent, had had eczema. Now 772 is 57 per cent of the 1,354 eczemas that we have observed. Many of these eczemas were seen in infancy and early childhood, and therefore had not had time to develop other symptoms; so we can conclude that eczema in childhood foretells asthma in more than half of the patients.

Gastro-Intestinal System.—Frequent bouts of colic in infancy, and abdominal pain and distress in childhood, are at times due to allergy. Dislike of certain foods or inability to eat certain foods without being followed by abdominal pain or distress, or vomiting or burning of the mouth with itching and possibly swelling of the tongue and lips, are more than enough to make one say that the patient is allergic. Attacks of so-called appendicitis, with removal of a normal appendix, are at times not a rare first sign of the allergic make-up of the patient. We have no definite data as to how often asthma follows these episodes of infancy and childhood, but we do know that we get such a story from many asthmatics.

Respiratory System.—Of the 7,000 allergic patients whom we have observed, 5,700, or 80 per cent, had respiratory symptoms. Asthma without nasal symptoms, or allergic nasal symptoms without asthma at some time in life, are very unusual. Where there is one there is the other, and to recognize the true nature of allergic nasal symptoms has proved of great value in the diagnosis of mild or impending asthma. Frequent so-called colds—colds that begin in the morning and are over by noon—are usually allergic in nature. Sneezing spells during sleep or in the morning on arising, itching of the nose, ears or palate, and chronic stuffy nose are other more easily recognized symptoms. The history of several operations on the nose or throat often foretells asthma. In 1925 we[3] reported that among 834 cases of asthma, 413, or 49 per cent, had had operations on the nose and throat. In this group of 413, 704 operations, or 1.7 operations per person, had been performed. It is not strange, then, that a history of repeated removal of the tonsils and adenoids is in itself enough to make one suspicious of the allergic cause of the patient's troubles, especially if the symptoms for which these operations were done were not relieved.

Examination of the mucous membrane of the nose and throat often foretells asthma. Usually the mucous membrane is edematous, glistening with fluid, pale or dusky red in color, and in the throat studded with many lymphoid nodules of varying size. The most extensive overgrowth of adenoid tissue is to be seen in allergic patients and, added to the chronic stuffy nose, makes the sagging jaw and mouth breathing of the so-called adenoid facies which is almost pathognomonic of allergy—at least in this part of the world.

Another important aid in separating nasal allergy from nasal infection is the examination of the nasal smear for eosinophils. We have made 237 such examinations at the Children's Hospital Clinic and 224, or 95 per cent, have been positive. When negative on repeated examination, the nasal symptoms have almost always been due to causes other than allergy.

Finally, the history of repeated attacks of bronchitis with or without fever, or of many attacks of pneumonia with or without wheezing, bespeak future frank attacks of asthma.

With any or all of these findings (since nearly 60 per cent of allergic patients give a positive hereditary history) we can often say, if such a history is gotten, that the patient will probably have asthma.

Whether asthma is foretold or is already present, it is clear from what has gone before that the future of the patient should now be an open book to the physician. We now turn to ways of modifying the future for the benefit of the patient.

METHODS OF EXAMINATION

Skin Tests.—Skin tests are used to find out what things make an allergic patient sick, and not to find out whether or not he is allergic. This latter can always be done by a clinical history and examination, keeping in mind the things already spoken of. Skin tests give the physician knowledge which will help him control the future of his allergic patient. Nothing has yet approached skin tests in their value for getting this knowledge. However, to trust them, the physician must know that

1. Reliable test substances were used.
2. A sufficient number of test substances were used.
3. A reliable method of testing was used.
4. A proper interpretation of tests was made.
5. Repeated testing was done, when necessary.
6. A correlation of results of tests with clinical findings[4] was made.

Under these conditions the knowledge gotten from skin tests will be of great value to the physician in planning the patient's life, controlling his illness and turning out an adult who may lead a normal existence.

The question now comes up as to how often this knowledge can be obtained, if tests are carried out as they should be. From the records of 3,463 allergic children so tested, we have found 85 per cent to give positive reactio[illegible] That is, skin tests give us the knowledge we [illegible] in nine out of every ten allergic children. At this point it will be well to remember that this knowledge is not to be used blindly; its limitations must be known. We know that positive reactions do not always mean that the substances giving such reactions must cause symptoms, nor, on the other hand, that negative reactions mean that the substances not reacting will not cause symptoms. But with the results of the skin tests to start from, and by correlating them with the clinical findings, it is usually possible to work out those exceptions which may occur.

Because exceptions do occur, and because one out of every ten allergic patients does not react to skin tests, elimination diets[5] have been developed. The principle of the elimination diet is to give a patient foods to which he is probably not sensitive until his symptoms are relieved, and then add single foods to the diet at intervals. Then, as symptoms do or do not follow, one may say that this or the other food is one to which the patient is or is not sensitive. This practice is of use in the exceptions already spoken of; but unfortunately, because its limitations are not known, it is now being used not only to find what foods make a patient sick, but also to find out whether or not he is allergic, which rightly should and can be done by ordinary clinical means. This is brought out because there are so many diseases aside from allergy which may be affected by changes in diet.[4]

Elimination Diets.—Let us, then, examine some of the limitations of the use of elimination diets, and some of the fallacies which allow these limitations to go unrecognized.

1. Elimination diets have to do with foods alone, and yet we know that only one child (or adult) out of one hundred is sensitive to foods alone. It is not true that foods are the only cause of asthma in childhood, for even though we remove offending foods from the diet, symptoms do not clear up unless we also take care of the pollens and other inhaled substances. Nor is it true that eczema, which is almost always thought to be due to food sensitivity alone, will always clear up without the same care being taken with inhaled and contacted substances. These the elimination diet of course does not include. In other words, foods are not the only cause of symptoms even in the very young, nor in those patients suffering with symptoms which are usually considered as due to foods alone.

2. Elimination diets are based on the use of a group of foods which do not ordinarily give positive skin reactions; in other words, they are based on the results of skin tests in a large group of patients. It is quite plain from this that many patients will be sensitive to foods in the elimination diet, and for this reason more than one diet is usually given in case the first does not relieve the symptoms. Each diet is given a trial of from five to fourteen days.[5] If successful in relieving symptoms, foods are added one at a time until a diet of sufficient variety, calories, vitamins and salts is reached. Each relapse of course means a longer period before this stage is reached. In any event, many weeks, and possibly months, are needed to develop this diet. It would seem logical, therefore, since the elimination diet is based on the results of skin tests, that the skin tests be done first and then, if no reactions are obtained, or positive and negative reactions do not jibe with the clinical results, to begin an elimination diet based on the skin tests done on the patient with whom the physician is personally concerned.

3. Elimination diets require a great deal of intelligent coöperation on the part of the patient. This is not always forthcoming. On the other hand, the physician who depends on elimination diets alone will be at a loss where to turn if they fail him. It is well, then, to have pointed out their limitations and their uses, just as we have in the skin tests in order that he may know just how useful each tool is.

IN CONCLUSION

With the knowledge gotten from testing, the physician is able not only to relieve the symptoms from which the patient is suffering, but in many cases to ward off others. This is true not only for allergic symptoms, but also for those complications which often accompany allergy, such as undernutrition, nasal operations, abdominal operations, pulmonary emphysema, bronchiectasis, deformities of the chest, nervous disturbances, economic and social misfitting, and whatever else may come from chronic sickness. All these may and do occur in the life of many allergic patients, and are here spoken of to emphasize what has already been said of the long view to be taken of the child asthmatic, and also to emphasize what has already been said of the necessity for early diagnosis. If one recognizes the less obvious early signs and turns to the skin tests for the needed knowledge, one may aid in giving these patients comparatively normal life.

1136 West Sixth Street.

REFERENCES

1. Cooke, R. A., and Van der Veer, A., Jr.: Jour. Immunol., 1:201, 1916.
2. The British Asthma Research Council, London Letter, J. A. M. A., 99:2043 (Dec. 10), 1932.
3. Piness, G., and Miller, H.: J. A. M. A., 85:339, 1925.
4. Piness, G., and Miller, H.: Jour. Allergy, 4:18, 1932.
5. Rowe, A. H.: Food Allergy. Philadelphia. Lea & Febiger, 1931.

DISCUSSION

Francis Scott Smyth, M.D. (University of California Hospital, San Francisco).—The paper on "Asthma in Childhood" by Doctors Miller and Piness, presents a very helpful discussion of allergy.

As to the allergic constitution, which is demonstrably hereditary, we are still groping for further identification. Basal metabolic rate, blood pressure readings, and various laboratory studies have failed to show uniform characteristics in the allergic group.

I rather like the suggestion of Woringer that eczema is a para-allergic manifestation. It is peculiar that the clinical manifestations (eczema) develop before the skin test, and that the substances, such as egg white, so often the first and most marked reactors, may have had little or no part in the diet. While I would not minimize the importance of foods, I should, however, mention the disparity that may be found when dietary therapy alone is tried. Not one of us would neglect the importance of physical agents, especially trauma. Restraint from scratching, avoidance of wool and silk, soap and sudden changes in temperature, and proper ointments play as important a rôle as the various allergens.

I believe it particularly wise to reassert the value of the skin test and individual study. While granting the variability of the former and necessity for repeated observations, it remains a most helpful guide.

Regarding dietary restrictions for growing children, I think that we should be most careful not to neglect the necessary protein requirement for growth. Animal protein is particularly desirable as a source of body protein. Sweeping restriction may produce a malnutrition most dangerous to the general health. I am not sure, for example, that a well-nourished eczematous infant is not a better risk than a malnourished, poorly resistant infant without so marked an eczema.

⁂

Edward Matzger, M. D. (909 Hyde Street, San Francisco).—I congratulate Doctors Miller and Piness for again publishing on the general subject of the allergic constitution. The bulk of the contributions on allergy have to do with the discovery of new excitants, of methods of study and of types of treatment. While this information is valuable, all of us treating allergic individuals are anxious to know more about the fundamental nature of the allergic constitution. Surely a statistical compilation of large groups of allergic patients who have been observed, tested and treated over a period of years, must contribute much to our understanding of the nature of the allergic group.

As the authors so graphically emphasize, we also must realize that an asthma attack in a child is just the beginning of a long series of allergic episodes. The proper treatment of each hypersensitive manifestation will tax the physician's diagnostic acumen, and he must be alert to the early recognition of each etiologic factor.

A new excitant, if quickly recognized, can be eliminated from the patient's environment, or an active immunity be induced before secondary factors assume importance. This procedure may save months of suffering and often surgical intervention.

Elimination diets, in one form or another, have been used ever since mothers have observed indispositions following the ingestion of certain foods, and certainly are to be advocated wherever they can be built up clinically. Elimination diets, however, based on average skin test reactions are obviously of less importance than elimination diets based on individual skin test diagnoses.

⁂

William W. Belford, M. D. (2545 Fourth Avenue, San Diego).—Our thanks are due to Doctors Miller and Piness for this paper. Those of us in the field of pediatrics are often hard-pressed to care for our asthma patients. It is likely each member of this section has seen asthma develop in a patient that has been under care for eczema. I doubt if any of us realized that the percentage of eczema patients later developing asthma was so large.

I am sure that the frequency of nasal symptoms of an allergic condition is not generally recognized. The frequent "colds," insignificant as they often are, yet quite a bother to the parent, with itching and frequent sneezing, are perhaps as common complaints as any that we hear of in the whole field of allergy. All too often we forget the allergic possibility until asthma or some other equally striking manifestation of the child's extreme sensitivity appears.

In the well-developed allergic rhinitis, eosinophils are found readily enough on study of a nasal smear. The same is true of a careful study of a series of blood smears when an elevation of the eosinophil count is very frequently found. In the early case (and each has to begin some time) this eosinophilia is not so common.

It seems that the scratch tests have been replaced by the intracutaneous tests. Doctors Miller and Piness check each negative scratch test with an intracutaneous test. They find about 80 per cent of the patients sensitive. So many parents are discouraged when an accurate study of their child is proposed, because they have seen a few scratch tests done with negative results. When the tests are done properly and carefully, a vast amount of information is obtained. With sufficient study and industry on the part of the physician doing thorough allergy work, about 80 per cent of these children can be brought "into balance." A "cure" cannot be expected, as Doctor Miller most aptly points out.

DIPHTHERIA IMMUNIZATION*

By Lillian Kositza, M. D.
Los Angeles

Discussion *by H. E. Thelander, M. D., San Francisco; George M. Stevens, M. D., Los Angeles; A. J. Scott, Jr., M. D., Los Angeles.*

In this article will be given a brief sketch of the prevalence of diphtheria in California, with special reference to the city of Los Angeles; also an evaluation of the various immunizing agents now employed to prevent the spread of the disease.

In most large cities diphtheria prevails endemically with periods when outbreaks of considerable severity are observed.

LOS ANGELES FIGURES

Our statistics show that during the decade 1921-1931 the diphtheria rate in Los Angeles steadily dropped. In the incomplete fiscal year 1931-1932 an increase in the number of cases and deaths has been noted.

The rates on the basis of one hundred thousand population are as follows:

Table 1.—*Los Angeles Figures for Ten-Year Period*

Fiscal Year	Case Rate	Death Rate
1921-1922	355	15.6
1930-1931	64	5.6
1931-1932 (estimated)	105	7.04
Cases to date, total....986	Deaths to date, total....66	

Morbidity figures for the state since 1923 show between 55 to 60 per cent of cases occurring in children under ten years of age. State figures, likewise, indicate that the fatality per cent is greatest in the preschool group. Morbidity and fatality per cent in age groups for children throughout the state are available since 1928.

Our own figures for Los Angeles City for 1931 show that fifty-four deaths out of a total of seventy-one occurred in children under ten years of age.

From analysis of the above figures we must conclude that the morbidity is greatest in the age group five to nine years, but that the danger to life is greatest in infants and the preschool group. We therefore cannot sufficiently stress the importance of protecting the preschool children from the dangers of diphtheria.

A recent report by Kinnaman[1] on the status of diphtheria in the State of Kansas indicates that

---

* Read before the California Lutheran Hospital staff, April 19, 1932.

TABLE 2.—*State Morbidity and Fatality Figures*

Age Group	1928 Cases	1928 Fatality	1929 Cases	1929 Fatality	1930 Cases	1930 Fatality	1931 Cases	1931 Fatality
Under 1 year	88	14.8%	40	17.5%	50	30%	42	19%
1-4 years	974	10.6%	615	12%	641	10.3%	686	12.2%
5-9 years	1703	5.9%	1059	7.1%	1063	6.3%	1328	4%

there was state-wide culturing of twenty thousand school children, whereby it was found that the per cent of carriers was practically the same in the immunized group as in the nonimmunized group. Furthermore, the immunized group were carriers of organisms of the most virulent type. From these observations they concluded that their case-fatality rate is increasing in the nonimmunized group, who contract diphtheria through exposure to these immunized carriers. It would appear then that in a partially immunized community there is greater danger to the nonimmunized group. This is a point to consider with regard to our own increased morbidity and fatality rates this year.

DIPHTHERIA IMMUNIZATION

That diphtheria immunization has played a great part in lowering the incidence of the disease during the last decade is generally accepted. That there may be some other factor which is to some extent also responsible for this decreased incidence cannot be denied.

Not until 1894, when Behring of Germany and Roux of France discussed antitoxin at an international congress in Europe, was there any known remedy for diphtheria. Following this congress, its use was begun in New York City by Park and Biggs,[2, 3] who began using it in the treatment of diphtheria and also as a preventive in those exposed. It was soon shown, however, that antitoxin could not be relied upon as a means of stamping out diphtheria.

Behring, about 1914, published results on toxin antitoxin as an immunizing agent in man. The progress of his work was interrupted by the World War. About this same time Schick demonstrated the value of the Schick test in determining susceptibility to diphtheria. Park and Zingher were the first to utilize the Schick test in determining the difference in reaction before and after administration of toxin antitoxin in susceptible children. By far the greatest amount of immunization work with toxin antitoxin was done in this country by Park and Zingher in New York City, where a city-wide effort to stamp out diphtheria began in 1920.

The first preparation of toxin antitoxin was made from undiluted toxin to which was added a certain amount of antitoxin. This at times caused severe local and general reactions. As time went on, diluted toxin, slightly more underneutralized, was used and less severe reactions followed.

By the end of 1928 fully 500,000 school children in New York City were immunized by the use of toxin antitoxin.

A campaign for prevention of diphtheria in preschool children was then started with the result that in a three-year period between 300,000 and 400,000 preschool children were immunized.

Within the last decade numerous reports have been published showing varying results with toxin antitoxin. Negative Schick tests following immunization have been reported in some groups above 90 per cent by Park and Zingher [4] and in other groups by Harrison [5, 6] as low as 60 to 70 per cent.

VARIATION IN RESULTS

The variation in the results may be due to difference in potency and to some extent to difference in reactions of subjects. Those in rural and less congested districts are more refractory to immunization than those in congested urban groups, where repeated exposure to diphtheria takes place. This has also been demonstrated in orphanages and boarding schools, where Schick tests were made on large groups, showing that the longer the children remained in these institutions the more apt they were to become Schick-negative. These groups when immunized with toxin antitoxin showed a larger percentage of negative Schicks following immunization in the groups which had been in the institutions the longest time. Others regard susceptibility to diphtheria not entirely a matter of environment but as due to some hereditary factor, finding a high correlation between resistance and susceptibility of parents and children.

Some experiments indicate that a longer time interval between injections may give better results. In some cases where after one course of injections children have remained Schick-positive, one or more injections with toxin antitoxin has quickly rendered them Schick-negative. Other experimenters have tried two-week intervals with toxin antitoxin, others have recommended four doses instead of three, others still have recommended even five doses in adults. Thelander [7] in San Francisco reported 92.3 per cent negative Schicks in a group of seventy-seven children under eighteen months of age with four injections of toxin antitoxin, whereas the previous year in a group of 115 with three injections they had 70.1 per cent negative Schicks. However, the three injections of one cubic centimeter each with toxin antitoxin at weekly intervals is the established method and has given the most satisfactory results.

TOXOID

Although in the United States toxin antitoxin has been most extensively used as an immunizing agent against diphtheria, toxoid has gained widespread popularity in France and Canada. Within the last few years, however, toxoid has been used more extensively in the United States and at

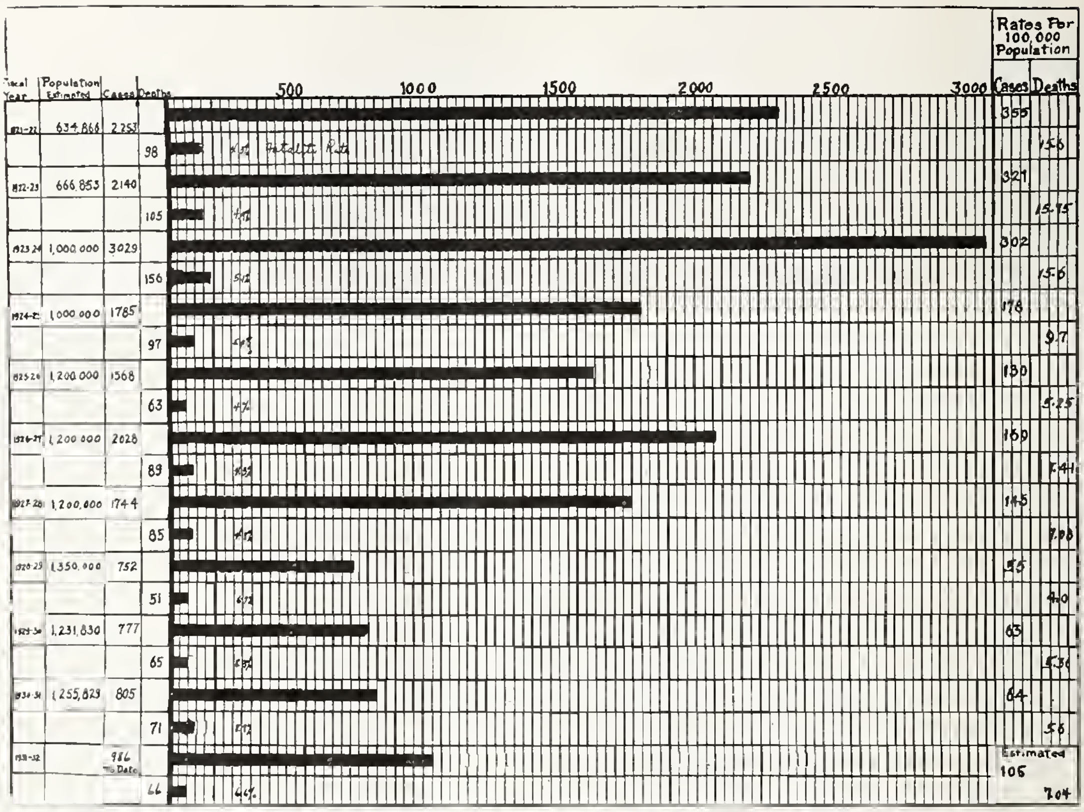


Chart 1.—Illustrates the morbidity and mortality figures for each fiscal year beginning 1922 and ending 1932.

present seems to be rapidly replacing toxin anti-toxin as an immunizing agent.

Experiments with the use of toxoid (or anatoxin) by Ramon [8, 9] in France have been carried on since 1923. This type of immunization has gained increased popularity, so that over a million people have been immunized by this method. Toxoid is prepared by adding formalin to toxin and subjecting the mixture to a temperature of about 40 degrees centigrade until all toxicity is lost, which usually takes from three to six weeks. Those advocating toxoid claim for it superiority over toxin antitoxin because:

1. It does not cause any serum sensitization (no serum being used in its preparation). Although Park [3] is of the opinion that the danger of serum reactions has been greatly exaggerated, it nevertheless is a factor to be considered, as shown in a detailed report by Gordon and Creswell.[10] They showed that even small doses of horse serum as used in toxin antitoxin were sufficient to give serum reactions in a large number of cases when subsequent therapeutic antitoxin was administered. To overcome this difficulty toxin antitoxin from goat serum and sheep serum is now available on the market.

2. There are a greater number of children immunized by the use of toxoid, as evidenced by a greater percentage of negative Schicks. Schwartz and Janney [11] found that in a group of 361 immunized with three injections of toxin antitoxin they had 78 per cent negative Schicks, whereas in a group of 128 where three injections of toxoid were used they had 98 per cent negative Schicks. Weinfeld and Cooperstock [12] reported a study with 104 nurses and medical students, showing 92 per cent negative Schicks when two doses of one cubic centimeter at three-week intervals were used.

3. The immunization is produced in a shorter period of time (six weeks to three months). Harrison [6] reports 355 children to whom three injections of toxin antitoxin were given at weekly intervals who showed 64 per cent negative Schicks three to six months later, as compared with a group of 318 children who received two doses of toxoid, one cubic centimeter each, with interval of thirty-one days between injections. In three and one-half months 94 per cent of these were Schick-negative.

4. Toxoid is more stable than toxin antitoxin. It does not dissociate by freezing, and therefore does not liberate free toxin, an objection frequently raised against the use of toxin antitoxin.

The chief drawback to the general use of toxoid is the severe local and general reactions which may follow its use in older children and adults. Few reactions occur in children under six years. Reactions to a large extent can be avoided by testing the individuals for reactions by using a small test dose of diluted toxoid, which is generally supplied in the package. If reactors are found, smaller doses, starting with one-tenth cubic centimeter, should be given, and as many as five smaller doses at two-week intervals may be necessary instead of the recommended two to three doses of one cubic centimeter each at varying intervals. No standardization of dosage and intervals at which toxoid should be given has as yet been established. Some recommend two doses of one cubic centimeter, varying the interval, as three weeks, one month, or six weeks between the two injections; others give three doses of one cubic centimeter at two-week intervals; others recommend variations in dosage, as .5 c. c., 1 c. c. and 1 c. c., or .5 c. c., .5 c. c. and 1 c. c. for the consecutive doses. Much has yet to be done to establish the optimum dose and optimum interval between doses. Some mention has recently been made of the use of a small amount of alum in toxoid preparations, which renders even a higher percentage immune. This preparation is as yet not generally available.

LOEWENSTEIN'S OINTMENT

Loewenstein's Ointment has recently also been tried as an immunizing agent against diphtheria. The ointment consists of toxoid and the filtered full culture of dead bacilli. Abt and Feingold [13]

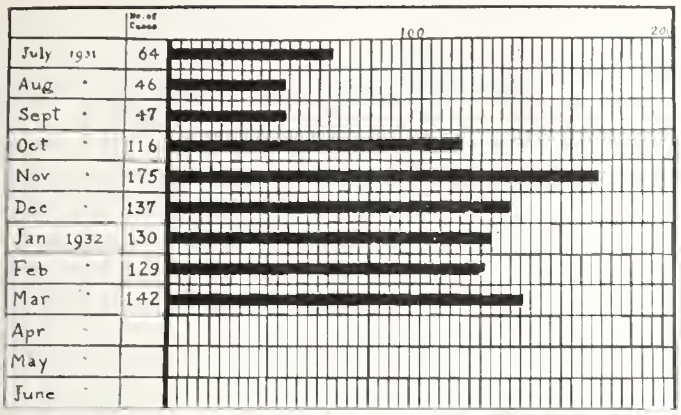


Chart 2.—Illustrates the incidence of diphtheria per month, beginning July, 1931. The increase started in October, 1931, and has continued each month through March of this year.

in this country have reported on its use in sixty-two children with resultant immunity in 70.9 per cent. Advantages claimed for it are chiefly: (1) Its use by inunction avoids the use of a needle. (2) No foreign protein is introduced. (3) It is not followed by any reactions local or general. Experiments with the use of this ointment have not been reported sufficiently to warrant any conclusions.

SCHICK TEST

No discussion of immunization is complete without some mention of the Schick test. We assume that a negative Schick test means the presence of sufficient antitoxin to neutralize the action of diphtheria toxin. This should correspond to at least one-thirtieth unit antitoxin per cubic centimeter of serum. Although a positive Schick is a reliable index that the individual has not sufficient antitoxin and is susceptible to diphtheria, a negative Schick is not correspondingly an absolute index that the individual has sufficient antitoxin to be protected. There are several sources of error which may arise from faulty technique in making a Schick test. The test must be made intracutaneously, and it is easy in some cases, especially in young children, to go below the skin. The toxin must be of proper strength and proper amount; exactly one-tenth cubic centimeter must be used. Recently there has been available Schick material where the toxin is already diluted and ready for use. This simplifies matters for a busy practitioner.

In children under six years no Schick test is necessary because the great majority under six years of age are susceptible. In our clinic practice, no routine Schick is made in children under ten years of age.

LOS ANGELES' EXPERIENCE

Diphtheria immunization with toxin antitoxin was started in Los Angeles at the Anita Baldwin Clinic in December, 1923. The next year the work was undertaken by the Los Angeles City Health Department. To date we have given approximately 136,000 injections, immunizing approximately 45,000 children, most of whom have been immunized in the last few years. Our experience has been chiefly with toxin antitoxin with most satisfactory results. We have not been able to compare the value of toxin antitoxin and toxoid by the percentage of negative Schicks following the injections, but have, however, had ample opportunity to compare the two immunizing agents from the standpoint of reactions. Our work with toxoid was started in October, 1930, at one of our clinics with a preschool group. No reactions followed, and we extended its use to the public schools in January, 1931. We continued the use of toxoid in the city schools until January, 1932, immunizing about 3,600 children by this method. At this time, because of the relatively frequent reactions both local and general, and the complaints of some of the principals, we considered it better policy to limit our use of toxoid to our conferences for the preschool group and use the long-tried toxin antitoxin, which has given us relatively few reactions for the school group.

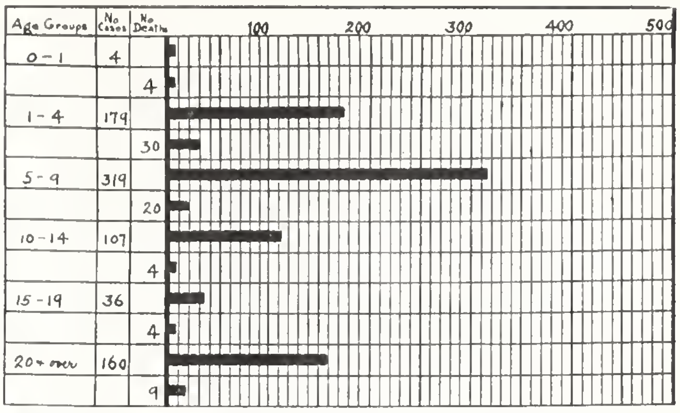


Chart 3.—Illustrates the morbidity and mortality for the different age groups for the fiscal year 1931. It is striking that 63 per cent of the cases are in children under ten years of age. Our figures further show that in 805 cases reported for 1931, 101 were in children six years of age. Our own figures, as well as those furnished us by the State Health Department, show that the highest morbidity and fatality percentage occur in the younger age groups.

In our older school children, reactions following the use of toxoid occurred frequently, causing in many cases loss of time from school. Reactions reported were either local as characterized by swelling, redness and tenderness, or general with such symptoms as fever, headache, nausea, and vomiting. In same cases both local and general reactions were reported.

Although it is recommended that older children and adults be tested for reactions by using a small amount of diluted toxoid, such procedure was not practical in our immunization program in the school.

At present we are using toxoid for all children up to seven years of age, giving it in two injections of one cubic centimeter each at monthly intervals, and toxin antitoxin for all children over seven years of age and adults, giving it in three injections of one cubic centimeter each at weekly intervals.

CONCLUSIONS

1. Our statistics on diphtheria indicate that the greatest morbidity occurs in children five to nine years of age, and the highest fatality rate in children under five years of age. In other words, the younger the child the greater the menace of diphtheria.

2. The importance of diphtheria immunization must be stressed in the preschool child and can

safely be accomplished during the first year of life.

3. The evaluation of immunizing agents now extensively employed show advantages in the use of toxoid because it does not sensitize to serum, is more stable, does not dissociate by freezing, and produces immunity in a shorter time and in a greater percentage of cases.

4. The use of toxoid in school children has given us severe reactions, causing loss of time from school. The use of toxoid in younger children has not produced any reactions.

5. We now limit our use of toxoid to children under seven years of age, and toxin antitoxin to older children and adults.

Los Angeles City Health Department.

REFERENCES

1. Kinnaman, C. H.: Effect of Diphtheria Immunization Upon Case Incidence and Mortality, Am. J. Pub. Health, p. 1013 (Sept.), 1931.

2. Park, William H.: The History of Diphtheria in New York City, Am. J. Dis. Child., p. 1439 (Dec.), 1931.

3. Park, William H., and Schroder, May C.: Diphtheria Toxin Antitoxin and Toxoid—A Comparison, Am. J. Pub. Health, p. 7 (Jan.), 1932.

4. Park, William H., and Zingher, A.: Immunity Results Obtained with Diphtheria Toxoid and One-Tenth L Plus Mixtures of Toxin Antitoxin in Public Schools of New York City, Am. J. Dis. Child., p. 464 (Oct.), 1924.

5. Harrison, W. T.: The Immunizing Value of Diphtheria Toxin Antitoxin Mixture and Diphtheria Toxoid, Pub. Health Rep., p. 1883 (Aug. 15), 1930.

6. Harrison, W. T.: Advantages of Toxoid in Diphtheria Prophylaxis, Am. J. Pub. Health, p. 17 (Jan.), 1932.

7. Thelander, H. E.: Personal correspondence. San Francisco.

8. Ramon, G., and Helie, G. I.: Anatoxin as an Immunizing Agent Against Diphtheria, Am. J. Dis. Child., p. 685 (Apr.), 1930.

9. Ramon, G., and Debré, R.: Value and Duration of Immunity Conferred by Antidiphtheritic Anatoxin, Am. J. Dis. Child., p. 1 (Jan.), 1931.

10. Gordon, J. E., and Creswell, S. M.: To What Extent Do Toxin Antitoxin Mixtures Sensitize to Therapeutic Serum? J. of Prev. Med., p. 21 (Jan.), 1929.

11. Schwartz, A. B., and Janney, F. R.: Comparative Value of Toxoid and Other Agents in the Immunization of the Preschool Child Against Diphtheria, Am. J. Dis. Child. (March), 1930.

12. Weinfeld, G. F., and Cooperstock, M.: Comparative Effect of Diphtheria Toxoid and Toxin Antitoxin as Immunizing Agents, Am. J. Dis. Child, p. 35 (July), 1929.

13. Abt, A. F., and Feingold, B.: Diphtheria Immunization, the Percutaneous Method of Loewenstein, Am. J. Dis. Child., p. 8 (Jan.), 1931.

DISCUSSION

H. E. Thelander, M. D. (384 Post Street, San Francisco).—The fact that in the Los Angeles schools toxin antitoxin was discontinued in favor of the better immunizing agent, toxoid, and then returned to when the latter gave annoying reactions is sufficient evidence that the ideal method of immunizing children has not yet been reached.

In public health work, where there is not the close relationship between parents, doctors, and children that there is in private practice, it is essential in order to carry out successfully a public health program that the methods used be as far as possible above criticism. Seventy per cent immunity, which is a generous estimate for toxin antitoxin, is not sufficient security for children to warrant continuing its use without re-Schicking the children.

Diphtheria in supposedly immunized children discredits the procedure, and severe serum disease following the treatment of such cases does not simplify the problem. On the other hand, if toxoid incapacitates a fair percentage of children for a day or more with each injection it will not be accepted by the public. It is quite possible that one cubic centimeter doses of toxoid are larger than necessary. We have immunized nurses with five small doses, totaling 1.5 to 2 cubic centimeters, with satisfactory results and very slight reactions. Even smaller doses may be effective. We are at present running such a series in Schick-positive medical students.

The percentage of Schick positive adults is surprising. In recent groups we had from 40 to 80 per cent positive in nurses, medical, and dental students. Double Schicks were made on these groups, the old Schick with control material being applied to one arm, and the new already diluted material and its control to the other. Discrepancies were checked by Kellogg tests. The new material was found considerably less reliable than the old.

⁂

George M. Stevens, M. D. (Los Angeles City Health Department, Los Angeles).—Toxin antitoxin as a prophylactic for diphtheria will soon be obsolete; in fact it should never be used by choice on any individual. Any preparation containing horse or other serum should be reserved for treatment rather than for immunization.

Serum disease is entirely too prevalent and is not considered seriously enough. The fact that an individual may in some future disease crisis require serum antibody therapy should never be lost sight of, nor the fact that the avoidance of serum sickness at that crisis may mean the difference between life and death.

Although violent immediate reactions of serum have sometimes followed the first known injection, we know that in most instances serum has been given at some previous time.

Toxoid free from serum is rightly usurping the place of toxin antitoxin. Emphasis, of course, should be placed upon immunization of the preschool child. The slogan should be, "Protect every child at six months of age."

Toxoid reactions as they occur in older children are protein reactions, but not serum protein reactions. The objectionable substance, chiefly at least, comes from the autolyzed diphtheria bacilli of the culture in the making of the toxoid. A good product as now made is five times as potent for protective purposes as toxin antitoxin. If there is added only an equal quantity of diluent, the product is still two and one-half times stronger than toxin antitoxin and seldom gives annoying reactions and is therefore more desirable to use on older children.

The persistence of immunity in children immunized with toxoid is the same as when toxin antitoxin is used.

⁂

A. J. Scott, Jr., M. D. (1401 South Hope Street, Los Angeles).—Doctor Kositza has presented the subject of diphtheria immunization as it is practiced today by public health officers and pediatricians.

In our work we use one cubic centimeter of toxoid every three weeks for three doses, starting at the age of six months and up to six years of age. We find no local or constitutional reactions. We use the same dosage for the infant as for the older child. For the child past six years old we use toxin antitoxin every two weeks for three doses.

We never use the Schick test under six years of age to determine susceptibility prior to giving the toxoid, but always use the test for children over six years. We test children four to six months after the last immunizing dose. We prefer the Schick material that requires dilution at the time of use. No control is used, but we have the child return in six or seven days for reading the test. This time interval eliminates the pseudo-reactions. In order that we may be certain that the material is potent, we test a large group of children at one time and use mothers and nurses, who have not been treated, as controls and find many times two or more of these latter will give a positive Schick reaction.

If after immunizing doses a child has a positive Schick test, we wait another ninety days, re-Schick and if still positive repeat the toxoid or toxin antitoxin, using, however, only two doses three weeks apart. We then re-Schick in another ninety days. The test is usually negative at that time.

The question of exact dosage and time interval between doses is not definitely settled yet, but until that time the present technique is workable and does no harm but much good.

It has never been our experience to see any sensitization to horse serum from the use of the toxin antitoxin, with one exception, since the first use of this material a number of years ago, and in many hundreds of immunizations. It is possible to have it occur, but this should not deter us from using the material in the older child if he is susceptible to diphtheria. This is another argument for the early immunization of the child with the toxoid.

The statistics that Doctor Kositza presents for the Los Angeles district show that the education that has been going on for the past few years is bearing fruit. However, the gradual increase in the morbidity and mortality rates of the past two years shows that there has evidently been a letting up of the intensive campaign for diphtheria immunization on the part of ourselves as practitioners, and the work of education may be taken over by the health authorities.

⁂

Doctor Kositza (Closing).—I wish to thank Doctors Thelander, Stevens, and Scott for discussing my paper.

Since this paper has been written we have again resumed the use of toxoid in our diphtheria immunization in the Los Angeles City schools. We are endeavoring to carefully check on the type and frequency of reactions to toxoid in children over six years of age.

THE LURE OF MEDICAL HISTORY*

FIFTY YEARS OF PROGRESS IN THE PREVENTION OF DISEASE†

By J. C. Geiger, M.D.
San Francisco

I

The revolution in preventive medicine, so ably begun by a chemist, the revered Louis Pasteur, was given great impetus by Ryndall, a physicist, and Robert Koch, a bacteriologist. Bacteriology has, in turn, revolutionized our isolation and quarantine procedures, particularly as to recognition of the existence of the healthy carrier. There is no doubt that Theobald Smith focused attention on the importance of transmission of disease by insects. Biggs really modernized public health practice in the United States.

It was not many years ago that the conscientious health officer first offered to quarantine the cases of communicable disease that busy practitioners happened to report. When the quarantine terminated—the time being usually set by convenience or by social standing—the premises were diligently fumigated. Many communities expressed heartfelt gratitude for this service. But quarantine and terminal fumigation are both relatively unimportant features today in the control of communicable disease. Fumigation, with its frequent destruction of clothes, bedding, etc., was time and energy wasted.

An entirely new conception of public health arose when healthy carriers were recognized to exist, and when mild, atypical or missed cases could and did account for the spread of disease. It is now axiomatic that, if communicable diseases are to be controlled, we must investigate and determine their source and destroy it, and learn how diseases are disseminated. But in many common infectious diseases we must deal primarily with persons, not things.

There are fanciful routes of infection popularly suggested in some diseases; even now the cancer house is spoken of as was the tuberculosis house in years gone by. Diseases carried by letter are not quite in the limbo of things forgotten. Some genuine modes of transmission, in a few diseases, do stretch the plausibilities. We must provisionally accept all possibilities, but never exclude the usual routes. These are, for all practical purposes, contact, milk, and water.

The control of any disease depends, first, upon an early and accurate diagnosis; second, the source, vehicle, or avenue of infection; and third, the prompt blocking of these with every reasonable force. It depends also on public confidence in the health officer, for sometimes he must take extraordinary steps. There is no need, ordinarily, to prevent contact of persons; but drinking water and milk should be carefully analyzed before their use is permitted.

One of the difficulties here becomes acutely manifest. Much laboratory work is inconclusive; specimens examined today and found potable may tomorrow show an unhealthful condition. To make milk and water safe for human consumption means an untold number of inspections, ceaseless vigilance and a balanced understanding of the factors operating within and without the supplies. It is possible to discover an infecting organism in the water and milk, but seldom indeed is it discovered or even attempted. The most important and most difficult control is the isolation of the infected, since it is not feasible to go through the whole community. Quite often, milk handlers and others are subjected to examinations of all types, particularly of specimens of the urine, the feces, and from the throat; the value of the examinations depends upon the skill of the laboratory technician and the promptness of the investigation.

STATISTICAL EPIDEMIOLOGY

Two of the modern weapons of public health work are bacteriology and epidemiology. Many of our older health officials regard them as synonymous. But lemology, or lemography, meaning the sum of human knowledge as to pestilence, was long known before bacteriology came into existence. The term "epidemiology" is more frequently used today. Epidemiology is a science with ramifications, including occurrence, incidence, distribution, infectivity, virulence of the causative microbe or viric factor, and seasonal or calendar periodicity both present and past. Necessarily, the epidemiologist must have a broad training in bacteriology, immunology, medical zoölogy and parasitology, statistics, public health administration, and sanitary engineering.

---

* A Twenty-five Years Ago column, made up of excerpts from the official journal of the California Medical Association of twenty-five years ago, is printed in each issue of California and Western Medicine. The column is one of the regular features of the Miscellany Department of California and Western Medicine, and its page number will be found on the front cover index.

† One of a series of public lectures by invited speakers, conducted by the Stanford University School of Medicine.

† From the Department of Public Health, San Francisco.

Epidemiology must have a starting point, and this is usually statistical. Standard regulations cover about forty-two notifiable diseases. The discerning health official must have a daily, weekly, or monthly report, or all three; he must picture the location and number of cases with charts, and must know the previous movements of the patients. Highly desirable is the history of past incidence, in terms of an average for the nonepidemic period, the so-called "norm" or "expectancy." Such averages, when plotted in curves and corrected as to population estimates, may give reasonable endemic or constant seasonal information. For instance, if the expectancy or norm, or endemic constant, is fifty cases of a disease for a given locality and period, say a month, and the number of reported cases is 100, then the epidemic index in percentage would be 200, basing the normal on 100. With such information, and with care as to deviations (changes in population, etc.), the health official has a useful basis for collection purposes and for forecasting and broadcasting.

FIELD EPIDEMIOLOGY

The discovery of the microbe, or ultravisible viric causes of disease, as in acute anterior poliomyelitis (infantile paralysis); or of the parasite without its intermediate host, as in amebic dysentery; or with such a host, as in malaria; and the discovery of the manner of spread from person to person have added many new helps to epidemiology. But the mode of spread of many diseases is still obscure, or a matter of conjecture. Presumably, contact with the case or with the healthy carrier or missed case accounts for the spread of many diseases, yet elucidation of the problem of such dissemination is still being sought.

One of the difficulties not yet surmounted is the apparent power of a microbe or ultravisible virus to produce either serious or mild cases, or to produce few cases at some period or for several periods, or to cause epidemics or interepidemics (the so-called recurrences), or great pandemics.

It is attractive to assume, in this order of importance, that the virus of a disease like influenza is widely distributed, that individual and even racial susceptibility plays an important rôle, and that the virulence of pandemic strains subsides for years or becomes innocuous. Microbic or viric subsidence from a virulent to a nonvirulent status has been suggested as a possible explanation of certain vagaries in the epidemiology of communicable diseases, particularly epidemic cerebrospinal fever (meningitis); but at present this is not quite susceptible of proof. For instance, the facility and frequency of occurrence of influenza is very manifest, as is its dual epidemiologic rôle of pandemics and interepidemics. Possibly exaltations in virulence do occur. Two epidemiologic facts stand out prominently as to the pandemic of influenza: that the so-called first wave was relatively slight and occurred in the spring; and that the second wave, occurring in the fall of the same year, was more explosive, more dangerous, more dispersive, more incapacitative, more depressive of mind. Possibly the former might be considered as a "tuning up" of the virulence of the causative factor.

Many diseases, especially measles and scarlet fever, seem to occur in cycles or at periodic intervals which are assumed to be due to an accumulation of the crop of susceptibles. Other diseases appear year after year with seasonal regularity. The reason for the two periodicities is not yet known. We know, however, that malaria is dependent on several factors in order to become epidemic or prevalent in a community. These factors include presence of human carriers of the parasite, presence of the parasite in the blood in sexually differentiated forms, abundance of infected mosquitos of a suitable variety, proximity and extensiveness of breeding areas. But even with all these present, infection may depend on the weather and temperature; for no matter how perfect the type of insect host or the number of carriers, the female mosquito will not convey malaria when temperatures are too low.

Besides affecting malaria, climatic conditions seem to affect other diseases and their virulence. For instance, African sleeping sickness is apparently limited to certain regions suitable to the tsetse fly. This is apparently true of Rocky Mountain spotted fever and its tick vector. Bubonic plague depends not only upon the flea of the infected rat or other rodent, but also quite definitely upon humidity.

Environment plays a most important rôle. Natural resistance to disease must assert itself in many ways, and this may partly depend upon dietary factors (in vitamins), partly upon rest. Fatigue is considered a marked contributor to tuberculosis and cholera. Sunlight helps prevent pneumonia and partly depends upon the measures taken against the smoke nuisance in cities. Overcrowding, because of improper housing conditions, undoubtedly plays its part in the spread of respiratory infections and epidemic cerebrospinal fever (meningitis).

The first American bathtub was used in 1842. Imagine American living standards of today accepting the presence of the louse or the unclean as in days of old! Likewise, sewage-contaminated water supplies, the sale of unwholesome raw milk from unhealthy cattle, the distribution of unprotected, understerilized or improperly preserved food supplies should no longer be tolerated.

There is no doubt that continued research in epidemiology, especially experimental, is needed in order to understand factors as yet unexplainable. In any event, the use of preventive measures against diphtheria with toxin-antitoxin or toxoid, and against typhoid fever and smallpox by vaccination has had a remarkable effect upon the reduction of these diseases. Preventive medicine and sanitation have not eliminated disease, but they have held pestilence in check. Because of the rapidity of travel today, especially by air, with its associated possibilities in the spread of diseases, epidemiology must more than ever take its place as a protective science.

San Francisco Department of Public Health.

(To be continued)

CLINICAL NOTES AND CASE REPORTS

INSTRUMENTAL PERFORATION OF THE RECTUM

By Kenneth E. Smiley, M. D.
Los Angeles

PERFORATION of the rectum into the peritoneal cavity with the proctoscope, or with instruments passed into the rectum for treatment, has been reported infrequently, yet the danger must be recognized and constantly borne in mind. Without early recognition of the condition and prompt surgical repair of the perforation, fatal outcome is inevitable.

Injury to the rectum by falling on to sharp objects, by gunshot wounds, and by the sudden dilatation caused by compressed air is not uncommon. Spontaneous perforation or rupture caused by enemata under pressure may occur in ulcerative conditions, and indeed may occur spontaneously. Barron, in a very comprehensive paper on simple nonspecific ulcer of the colon, collected fifty cases from the literature and added three of his own. Spontaneous perforation into the peritoneal cavity occurred in the majority of these cases.

Brumbaugh reported a perforation following an attempt at sigmoidoscopy by an inexperienced individual. Goldman reports three such cases, the first in an individual with a normal bowel, the second in an individual who had had a severe diarrhea for several days, and the third occurring in a case of chronic ulcerative colitis.

REPORT OF CASES

Two cases of instrumental perforation are reported in this communication—one with a rectal stricture, and the other with probably a normal bowel.

Case 1.—The first case is that of a male, age 52, who had neurosyphilis for which he had received intensive treatment for a number of years. He also had a stricture of the rectum of long standing. Because of this stricture, his physician had given him, two days previously, a Jelk's irrigating tube to use at home. The second time he used this, he experienced considerable difficulty passing the tube beyond the stricture, and experienced severe pain in the rectum. However, he irrigated the bowel and very shortly afterward began to have severe upper abdominal pain. He was seen by a physician, who made a provisional diagnosis of a tabetic crisis and gave morphin twice without relief, and then sent the patient to the hospital, where I saw him, it then being approximately twelve hours after the use of the irrigating tube. He appeared to be in great distress and exhibited all the classical signs and symptoms of shock. The abdomen was board-like and slightly distended, and a shifting dullness was present. On rectal examination, a stricture which admitted only the tip of the finger was found. Temperature was 97 degrees; pulse, 100; white blood count 4,000 with 67 per cent polymorphonuclears. A diagnosis of rupture of the rectum was made and, in spite of the very poor prognosis, operation was advised as offering the only hope of recovery. On opening the abdomen a large amount of seropurulent material was aspirated, and a perforation just above the peritoneal reflexion was found. The perforation was repaired with considerable difficulty owing to the extremely friable bowel wall, and the abdomen closed with drainage. The condition of the patient gradually became worse, and he died ten hours later.

* * *

Case 2.—The second case I am allowed to report through the courtesy of a colleague. The patient was a woman, fifty-four years of age, who complained of vague upper abdominal distress. In the course of a complete study, a sigmoidoscopy was attempted by an inexperienced individual. It was stated that the patient complained of very severe pain at the time of the examination, and that the examiner believed he saw a small ulcer and a bleeding point on the bowel wall. The patient was fairly comfortable until two hours later, when she began to have severe, generalized abdominal pain, which gradually increased in severity and was accompanied by a board-like rigidity of the abdomen. A diagnosis of rupture of the rectum was made, but operation was refused. At autopsy a perforation of the rectum was found without indication of any previous pathology in the bowel wall.

Such accidents probably occur much more frequently than the reported cases would indicate, and yet in this day of the indiscriminate use of colonic irrigations by incompetent individuals, gyser-like enemata, and all types of rectal instrumentation, it is small wonder that we do not see perforations with much greater frequency.

With a history of some type of instrumentation or treatment, and with the usual signs and symptoms of perforation of the bowel, diagnosis should not be difficult. Early operation offers the only possible chance of recovery.

1930 Wilshire Boulevard.

REFERENCES

Spencer, W. G.: Two Cases of Rupture of the Rectum Communicating with the Peritoneal Cavity, Brit. J. Surg., 10:304 (Oct.), 1923.

Waring, H. J.: Perforating Wounds of the Rectum, Brit. J. Surg., 3:549 (Jan.), 1916.

Hays, G. L.: Pneumatic Rupture of the Bowel, Surg., Gynec., and Obst., 43:491 (Oct.), 1926.

Macdonald, C.: Acute Sigmoiditis, Perforation and General Peritonitis Following Rectal Injection, M. J. Australia, 2:10 (July), 1923.

Hanfield Jones, R. M.: Two Cases of Ruptured Sigmoid Colon, Brit. J. Surg., 10:425 (Jan.), 1923.

Barron, M. E.: Simple Nonspecific Ulcer of the Colon, Arch. Surg., 17:355 (Sept.), 1928.

Brumbaugh, C. G.: Rupture of Rectum Resulting from Instrumentation, Atlantic M. J., 27:651 (July), 1924.

Goldman, C.: Rupture of Rectum During Proctoscopic Examination, J. A. M. A., 93:31 (July 6), 1929.

AN UNUSUAL CONGENITAL UROGENITAL ANOMALY

REPORT OF CASE

By D E. F. Easton, M. D.
San Francisco

ON August 3, 1931, Mrs. L. G. came under observation for a pain in the left upper abdomen, which had been there since a severe fall in June. As a question of public liability was concerned, a complete physical examination was

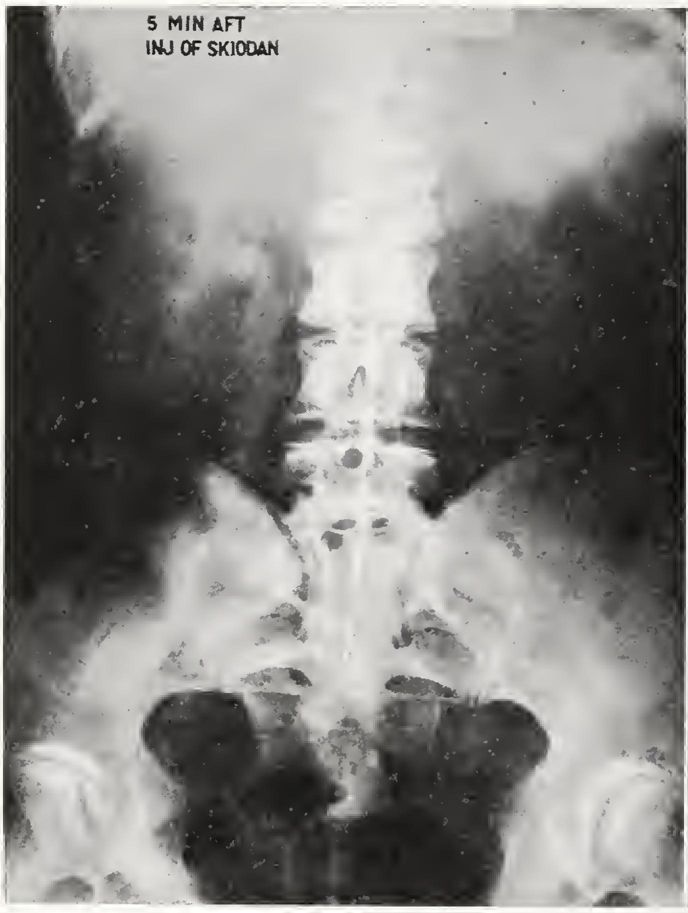


Fig. 1.—Taken five minutes after injection of skiodan. Right kidney and ureter visualized. Left kidney not seen. Spina bifida.

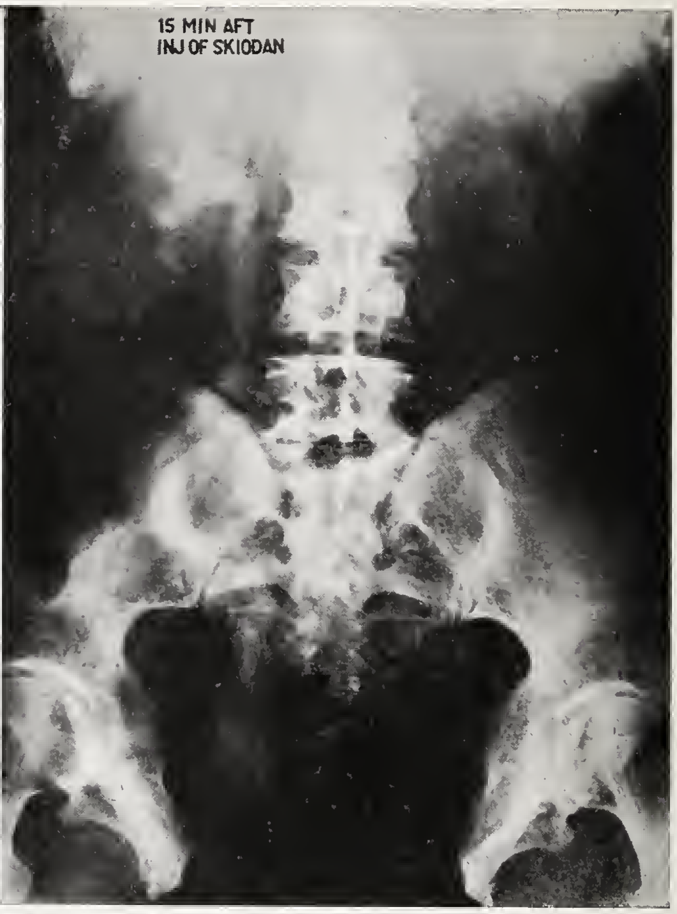


Fig. 2.—Taken fifteen minutes after injection of skiodan. Right kidney and dilated ureter more distinct. Sac-like dilatation visible. Shows congenital absence of pubic symphysis.

made. In the course of the examination the congenital urogenital anomaly about to be described was disclosed. For the sake of brevity details regarding all parts of the body except the abdomen and urogenital systems have been omitted, as they have no bearing upon the condition under consideration.

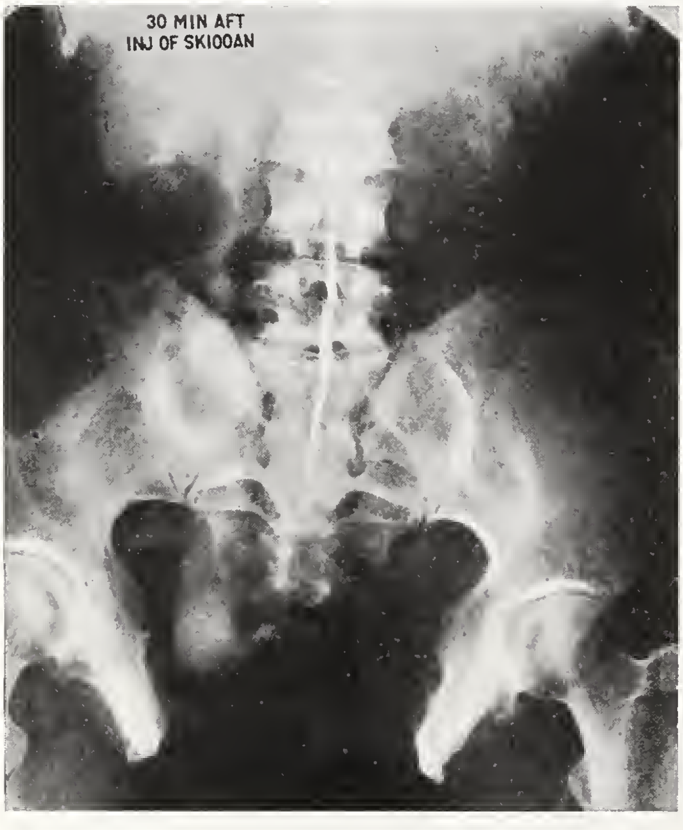


Fig. 3.—Taken thirty minutes after injection of skiodan. Shows sac-like dilatation of ureter more distinctly. Diverticulum at upper portion of the sac. Absence of bladder. No kidney or ureter visible on the left side.

REPORT OF CASE

Patient was slender and well nourished; age, 60 years; height, 5 feet 6 inches; weight, 128 pounds.

Examination of the Abdomen.—Abdomen was slightly distended and tympanitic. A rounded mass about the size of a small orange was felt in the left upper abdomen over the site of pain, the nature of which was at the time undetermined. There was no umbilicus. There was an apparent exstrophy of the bladder and a circular mass three inches in diameter over the pubic region, raised about an inch above the surrounding skin. Above this mass was a small area of ichthyosis and a very few pubic hairs. Urine seeped involuntarily through a tiny opening in the lower median portion of the mass. This mass was covered with mucous membrane. There was no clitoris, the mucous membrane covering the mass being continuous down into the vagina, which in the recumbent position was directed inward, downward, and backward. The labia minora were rudimentary, being one and one-half inches long; hard and rounded. The labia majora were also rudimentary and widely separated. No abnormality of the uterus, tubes, or ovaries. There was no urethra in the usual position.

Consultation with Dr. George L. Eaton was had on the same day, and a cystoscopic examination decided upon. She was admitted to the St. Francis Hospital the next day. Under ethylene gas anesthesia the tiny opening in the mass was gently dilated and a cystoscope inserted. Catheterization of the ureters was not accomplished. On August 5, 20 cubic centimeters of a solution of skiodan was injected intravenously, and x-ray pictures taken five, fifteen, and thirty minutes afterward.

Skiodan Examination of Kidneys and Ureters.—Fig. 1 shows film, taken five minutes after injection, and reveals complete visualization of the pelvis and calices

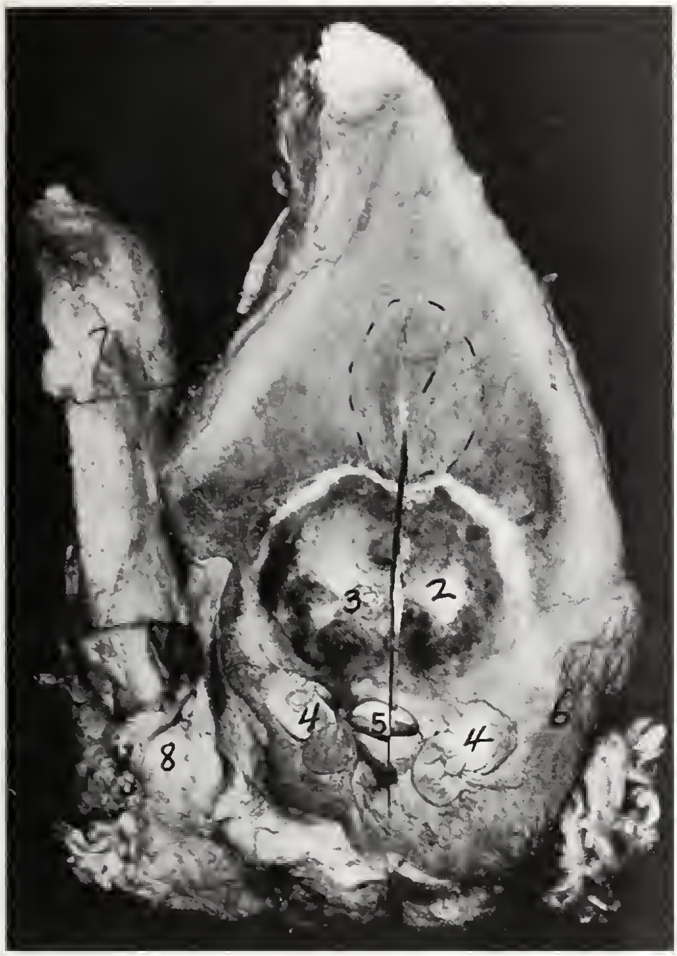


Fig. 4.—The numbers indicate the following: 1. Ventral hernia outlined. 2. Mass over the pubic region. 3. Opening through which urine seeped. 4. Labia minora. 5. Vagina. 6. Labia majora. 7. Distended ureter. 8. Sac-like dilatation of ureter.

of right kidney; also the right ureter. These all show a generalized dilatation, dilatation being most marked throughout the upper portion of the ureter. In the right kidney are two small densities which are apparently calculi. No visualization noted throughout the left kidney and ureter. There are several areas in the region of the lower pole which are suggestive of calculi.

Fig. 2 shows film, taken fifteen minutes after injection, and shows accentuation throughout the right, the ureter being a centimeter in diameter. The bladder consists of a small pouch which lies on the right side of the pelvis. No visualization of the left.

Fig. 3 shows film, taken thirty minutes after injection, and shows a slight decrease in visualization throughout the right with no visualization on the left. Sac-like bladder is somewhat accentuated.

The pelvis reveals a congenital anomaly in which there is an entire absence of symphysis.

She became progressively weaker, suffering intensely from nausea and taking very little nourishment. On August 23 she was paralyzed on the left side (arm and leg) and died at 7:10 a. m.

Autopsy.—Autopsy was done by Dr. A. M. Moody, the findings of which were as follows: A marked edema of the brain was noted. Healed tuberculosis at apices of both lungs and several scars. Pleural adhesions on both sides to the chest wall. Right kidney very large and congested. No stones were present, but a quantity of pus and gravel. Pronounced hydronephrosis and pyonephrosis; widely dilated ureter, which ended as a rounded, elongated sac. There was no bladder, the sac-like dilatation of the ureter taking its place, and lying entirely on the right side of the pelvis. On the left side was a very small kidney, about the size of an English walnut, imbedded in a large amount of fat and fibrous tissue which held it firmly in place and made it very difficult to remove. (This was the mass felt on the left side.) There was no ureter on the left side. The left kidney probably never functioned. There was a chronic, retrocecal appendix with many dense adhesions. Uterus, tubes, and ovaries were normal. There was a small ventral hernia just above the mass over the pubic region, in the sac of which the omentum was firmly adherent. In the wall of the hernia, under the skin; there was some scar tissue, although none showed on the surface. This must have been the place where the umbilical cord was attached. There was a total absence of the pubic symphysis, and of the ascending and descending rami of the pubis on both sides.

The cause of death was exstrophy of the bladder, causing ascending ureteritis and pyelonephritis of right kidney.

It is remarkable that she had attained the age of sixty years with such an ascending infection, and also that she could walk with no apparent change in gait, although the pelvic girdle was so incomplete.

422 Medical Building.

SACCULAR DILATATION OF SAPHENOUS VEIN

SIMULATING TUMOR OF THE GROIN

By Don D. Weaver, M. D.
Oakland

The following report may be of interest for several reasons—first, because of its rare occurrence. Not more than ten or eleven instances are found in the literature since 1835, when Boinet [1] reported his first case in the medical journal of Paris. It is of interest, also, because of the fact that with every patient so reported the surgeon has been caught off guard and led to make an incorrect preoperative diagnosis.[2 to 8]

The present case is distinctive because of the large size of the mass, and in that it contained a solid clot, presenting a hard lump in the groin instead of the usual soft swelling, which, in most cases, has been mistaken for femoral hernia.

REPORT OF CASE

S. M. Age, 54. Entered hospital December 29, because of a hard swelling in left groin. Family history negative. Personal history negative, except for injury ten years ago.

Patient stated condition began in 1930, when she noticed a soft, compressible lump in the left groin.

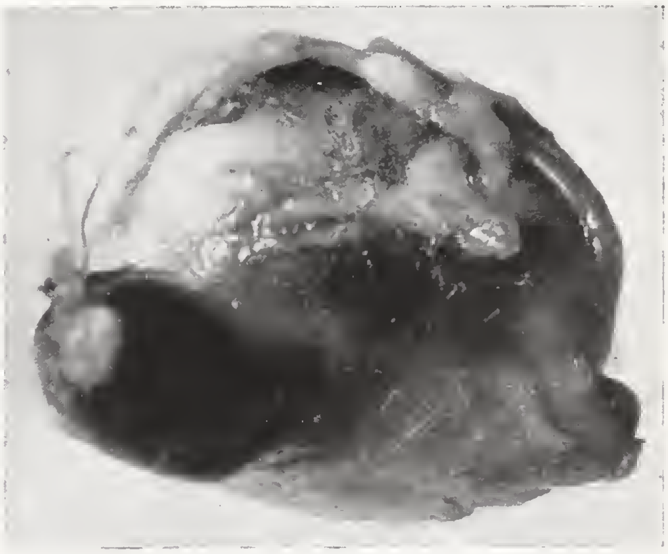


Fig. 1.—Sac unopened.

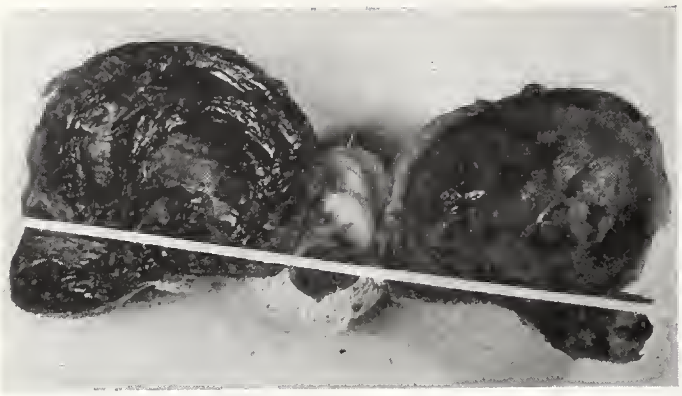


Fig. 2.—Sac split open, probe in vein, clot removed from one side.

This persisted for three years, but was not painful. About a week before she consulted us she noticed that the tumor-like growth was becoming larger, harder, and was more fixed, and that a dull pain was present.

Examination.—Entirely negative except for a large, firm, smooth swelling in the left groin, just distal to Poupart's ligament. The mass projected about 1½ to 2 centimeters above the level of the adjoining surface of the thigh. The tumor was circumscribed and movable in underlying structure. The dome was tense and smooth; no pain or palpatation; no fluctuation. Adjoining lymph glands were palpable, but not tender.

Patient seen in Cancer Clinic on December 30. Diagnosis: Tumor of groin. Excision and biopsy were advised.

On January 4 the patient was operated upon, and the swelling was found to consist of a large aneurysmal saccular pouch, extending from the saphenous vein close to its junction with the femoral. The sac was completely filled by a large solid clot, while the clot in the vessel lumen gave evidence of being more recent. The vein was doubly ligated, both proximal and distal to the sac, and was removed. Convalescence was uneventful.

Pathologic Report (By Dr. Gertrude Moore). — The submitted specimen is said to consist of an aneurysmal sac from the saphenous vein of the left leg. The distal vein measures 2 centimeters in diameter, the proximal vein 9 millimeters. Between these two extremities there is a sacular dilatation measuring 6 x 5 x 4 centimeters, moderately firm in consistency, somewhat fluctuant. There is a little perivascular fat, and adhesions on the surface. Cut sections through this sac show a large mass of fresh and old coagulated blood, some of the blood near the epithelial lining undergoing organization. The wall has a fairly uniform measurement of one-half to three-quarters of a millimeter in thickness. The endothelial lining appears fairly smooth and consistent throughout. The sac could be evacuated of its contents and leaves a fairly smooth glistening endothelial lining. It is moderately transparent, and the perivascular small vessels can be seen on the surface from the internal aspects. There is no evidence of rupture seen.

Diagnosis.—Aneurysmal dilatation of the left saphenous vein, sacular in type, showing beginning organization of the contents.

COMMENT

Etiology.—Under normal conditions veins are subject to many variations both in size and location.

In the veins of both extremities are found valves, which also vary in number and location and development. They are most numerous in the superficial veins of the lower extremity, where they prevent back flow and also serve to support the column of blood. Incompetency of these valves has long been associated with varicose veins of the leg.

Inasmuch as there are no valves in the vena cava and external iliacs, considerable pressure could be thrown upon the first portion of the saphenous if the valve guarding the opening between the saphenous and femoral were incompetent.

Often the history of injury and the mode of onset are helpful in making a diagnosis.

Diagnosis.—These conditions usually present a small swelling in the groin closely resembling a femoral hernia for which they are often mistaken. The swelling frequently disappears on lying down, and may give a slight impulse on coughing. The swelling is usually softer than that of a hernia, and is more easily compressed; but returns at once when in the erect position or upon relief of pressure. A thrill may be felt at times. The history of the injury and the mode of outset may be valuable in the diagnosis.

Without a doubt, the diagnosis of this condition should present no difficulties were it not for its rare occurrence.

400 Twenty-ninth Street.

REFERENCES

1. Boinet: Med. de Par. 2 S IV, p. 829, 1835.
2. Coopernail, G. P.: Varix of Internal Saphenous Vein Simulating Strangulated Femoral Hernia, Med. Record (June 27), 1914.
3. Dawbarn, R. H.: Cystic Dilatation of Internal Saphenous Vein Simulating Femoral Hernia, Annals of Surgery 32:297, 1900.
4. Nochran, A. H.: Note on Saphenous Varix Simulating Femoral Hernia, J. A. M. A., 4:2298-2299, 1910.
5. Richardson, E. H.: Note on Saphenous Varix Simulating Femoral Hernia, Annals of Surgery, 67:471-472, 1918.
6. Von Biesenberger: Medezinische Klinik, p. 1044, 1928.
7. Schwartz: Med de Paris, 1915.
8. Sistrunk, W. E.: Dilatation of Upper Portion of Saphenous Vein Simulating Femoral Hernia, Minnesota Medicine, p. 583, 1920.

A NEW VAGINAL RETRACTOR*

By Henry L. White, M. D.
Red Bluff

In placing a new retractor before the profession one is reminded that this field is already crowded. A few minutes with an instrument catalogue will convince anyone of this. However, and notwithstanding the above, I am going to describe a new retractor.

This retractor has been in use in my work for about five years. It is on every set-up for "lower work," and in most cases has met all the requirements asked of it. There is no claim made for the regular, well-known weighted type of Auvard's vaginal speculum. The attached lateral wings are original with me, as far as I know, and these, with Auvard's speculum, make up the described retractor.

In operation it is placed in the vaginal vault, using a small amount of any sterile lubricant; this after draping and placing a rectal towel, which

---

* Read before the Obstetrics and Gynecology Section of the California Medical Association at the sixty-second annual session, Del Monte, April 24-27, 1933.

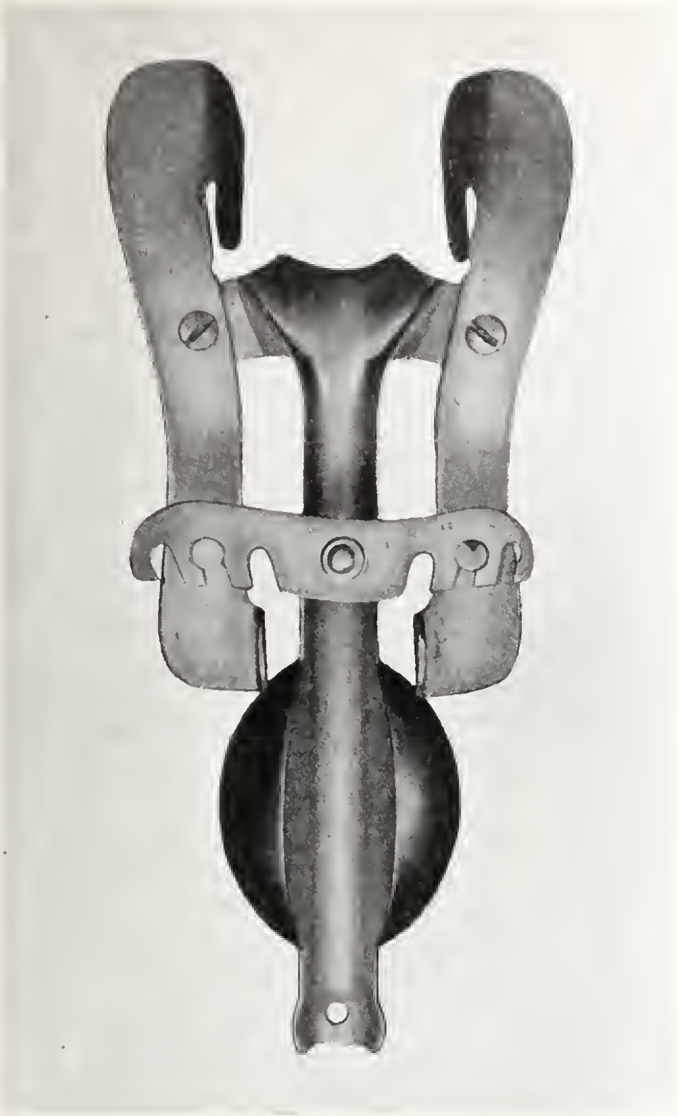


Fig. 1.—Operator's view of retractor, showing lock in place; lateral retractor blades partly open.

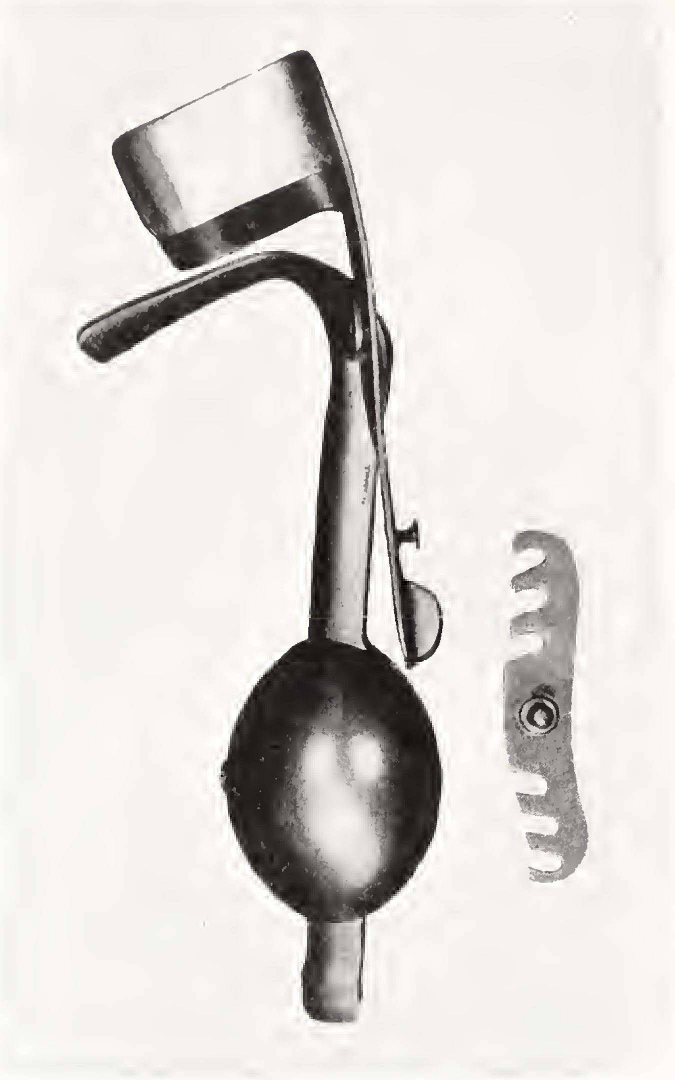


Fig. 2.—Side view showing Auvard's posterior retractor with White's lateral retractors added. The comb lock is shown separately.

it holds in place. The wing retractor blades are then forced open and locked with the comb lock, which drops over two stout pegs. The hinges are flat instead of wing nuts, in order to minimize the catching of sutures and packs. On one or two occasions the comb has dropped; but this has not prevented the use of the retractor, because it may be held open by lashing the lower pegs together with a common suture. I have tried to keep ratchets, screw adjustments, and all such gadgets out of this retractor because they always slip at the critical moment and the instruments so adorned end in the bucket.

The operations which are easily done through this retractor are: dilatation and curettements, resections of the cervix, anterior colporrhaphies, urethral operation involving the anterior vaginal wall, and placing of radium. In all these fields I believe the retractor is of distinct value. It is not naturally adapted to posterior vault work or perineorrhaphies.

Also these operations may be done by one person, not even using the nurse. I have had numerous suggestions for change on this retractor, but can only answer that I am trying to think how to better it and yet keep its simplicity and efficiency. I wish to keep it like the wheelbarrow, so simple that it is always useful.

The photographs are descriptive to anyone who has done, or does, vaginal surgery.

This retractor is self-retaining on most cases, and if not easily self-retaining requires only a slight pressure from a nurse to hold it in place. I have held it myself, and operated easily, in those cases in which it was not quite self-retaining.

Doane-Frey-White Clinic,
737 Washington Street.

UNUSUAL MASTOIDITIS

By R. C. McLaughlin, M. D.
Los Angeles

REPORT OF CASE

L. M., Jr., age 6, was seen December 13, 1931 at his home. He had an earache on the right side and also a temporal headache of the same side, present for the past twenty-four hours. An examination of the ear drum of the affected side showed it to be normal. There was a slight cervical adenitis of the same side. Patient complained of a sore throat, which on examination proved to be a pharyngitis. Tonsils and adenoids had been removed some eight months previously. The patient was next seen five days later at the office, with little change in his symptoms or complaint. His temperature was elevated each evening to 101 to 102 degrees. At intervals of two days his ear drum and mastoid region was examined and the tympanic membrane was normal in appearance at all times. There was slight mastoid tenderness on deep pressure. Patient was hospitalized December 28, and was carefully examined by an internist and consultant for some possible cause of his condition elsewhere situated. No such cause was found. An x-ray of the mastoid showed slight haziness of the cells and loss of trabeculae. Blood count revealed a leukocytosis of 22,000, with the polymorphonuclears predominating to the extent of 82 per cent. Urinalysis showed a slight trace of albumen, somewhat commensurate with his fever. In view of the increased temporal pain, restlessness, and swelling of the cervical glands below the mastoid region, it was decided to open the mastoid bone. The mastoid cells were found to be soft and contained granulation tissue, especially those cells adjacent to and in the floor of the antrum. The patient made a rapid recovery, with a return to normal temperature in twenty-four hours, and a rapid disappearance of swollen cervical glands.

COMMENT

The most interesting point about this case was the lack of middle-ear signs. The normal appearing drum membrane was rather disconcerting in approaching a diagnosis of mastoiditis, and is unusual. Explanations have been offered by different men who have experienced similar cases. For instance, it has been mentioned that inflammatory products within the middle-ear cavity may have been absorbed or dispelled through the eustachian tube into the nasopharynx. The relief of pressure within the tympanic cavity may therefore in a few cases come about via the eustachian route; and hence no spontaneous rupture of the drum membrane or even bulging would be noticeable. Adhesions within the aditus might conceivably separate the antrum and mastoid cells from the tympanic cavity, where absorption of the exudate presents a normal drum membrane as a result.

In a review of the literature it takes but a short time to find many otologists reporting somewhat similar cases that are classified as unusual, atypical, or some other similar heading. It seems unnecessary to mention or report their writings and names except to note the impressive survey of three hundred mastoidectomies of Watson-Williams,[1] who found fifteen cases without otorrhea, eight of which had normal appearing drum membranes, as revealed by the use of the illuminated speculum.

1200 South Alvarado Street.

REFERENCE

1. Watson-Williams, E.: Mastoid Disease without Otorrhea, Brit. M. J., 2:1099-1101 (Dec. 14), 1929.

OPIUM NARCOSIS

SOME NOTES ON ITS TREATMENT

By Thomas W. Bath, M. D.
Reno, Nevada

I AM not aware of ever having seen a specific and certain remedy for opium narcosis. My experience in the last ten years is limited to three cases, all women, and they were so similar in clinical character that a description of the third, which occurred last Memorial Day, will serve for the three.

REPORT OF CASE

Shortly after noon, May 30, the ambulance brought into the hospital a woman about twenty-eight years of age in complete opium coma. She was found in a telephone booth of a leading hotel quite unconscious. The unmistakable odor of paregoric was perceptible, and confirmed by finding an empty four-ounce bottle so labeled near her.

Paregoric contains, as is known, nearly two grains of opium to the ounce, or one-quarter grain of opium to the teaspoonful. There was no doubt that this woman had not only drank four ounces of paregoric, but, as we later learned from her history, she was a chronic addict to the drug, and had been, before taking this last potion, on a paregoric spree for several days. Her condition upon arrival brought the usual restorative measures, done by the head nurse, such as stomach lavage, with saving of the contents, in event of death, for the coroner's findings. Liberal draughts of hot strong coffee were administered by mouth, and an injection given by bowel. When I saw her at 2 p.m. her respirations were five every two minutes, pulse slow and moderately strong, and she was completely cyanosed. The surface of the body was bathed in clammy sweat, and the countenance bore the feature of rapidly impending death. Harsh mucous râles could be heard all over the room, similar to those of patients in the last respiratory stages of hypostatic pneumonia.

I immediately gave her by vein two ampoules of caffein with sodii benzoate, each ampoule containing 7½ grains of caffein. In fifteen minutes she received two more ampoules of caffein by intramuscular injection, and an hour later one more by intramuscular injection. This made a total of five ampoules, or 37½ grains of caffein by needle in about two and one-half hours. By 4:30 p. m. her respirations were sixteen to the minute; the cyanosis disappeared and the death rattle of the lungs likewise passed away, and there was a beginning of return to consciousness. At 6 p. m. the patient was practically normal.

The two former patients, if I remember, did not receive more than three or four ampoules by both methods, vein and muscle, but their recovery was quicker because they were not addicts and had taken opium only at the one time. The last of these patients was an addict and evidently had been drinking considerable paregoric before emptying the last bottle. That is our supposition, as we could not elicit a complete history even after recovery, the patient refusing to talk.

COMMENT

This last case was so desperate that I wanted to be sure and give enough caffein, even if it produced an exhilaration.

My experience with caffein in the poisoning of veronal and its compounds is that it does not work. In opium poisoning, I believe it is our only specific. The ancient treatment was by flagellation of the patient. Coffee, strychnin, atropin, artificial respiration, galvanic stimulation, I have tried and these failed. I recommend this treatment with the firm belief that it is a specific for opium narcosis, and one assuring a speedy recovery without other aids.

Red Cross in California.—At the peak of the emergency relief given to the victims of the Long Beach earthquake which visited California last March, 83,000 persons were being fed daily at thirty-one public stations. By proclamation of the Governor of California the American Red Cross was designated the official relief rehabilitation agency.

BEDSIDE MEDICINE FOR BEDSIDE DOCTORS

An Open Forum for brief discussions of the workaday problems of the bedside doctor. Suggestions of subjects for discussions invited.

EARLY DIAGNOSIS OF PREGNANCY

Samuel Hanson, M. D. (1009 Medico-Dental Building, Stockton).—The symptoms and signs of early pregnancy are very familiar to all. The recent introduction of the Aschheim-Zondek hormone test has, however, made a radical change in the problem of diagnosis. A review of the subject and a reappraisal of the value of the classical symptoms and signs has, therefore, become necessary.

In obtaining the history and in interpreting the symptoms of pregnancy, one must first determine whether or not circumstances exist which may cause the patient to conceal or to misrepresent the facts. For example, if there is reason to believe that an abortion is sought, a negative history may largely have to be discounted. Likewise, in certain medico-legal cases, or when pseudocyesis is suspected, a positive history should be accepted with much skepticism.

Among the symptoms of early pregnancy cessation of menstruation is by far the most important one. But it is a well-known fact that amenorrhea may be due to numerous causes other than those of pregnancy. The most important among these are acute and chronic illnesses which undermine the general health; particularly tuberculosis and conditions resulting in severe secondary anemia. Endocrine disturbances also play a very important rôle, especially hypofunction of the anterior pituitary, and both hyper- and hypothyroidism. Amenorrhea of endocrine origin also occurs during lactation or during the onset of the menopause. Amenorrhea may also result from various miscellaneous causes such as changes in climate, or profound psychic disturbances such as fear or shock.

On the contrary, vaginal bleeding, which to the patient may be indistinguishable from menstruation, may occur during one or more regular monthly periods following conception. Irregular bleeding may also occur, which may be due to a threatened abortion or to an ectopic pregnancy.

However, with all due allowances for exceptional conditions, amenorrhea remains the most important symptom of early pregnancy, while regular monthly vaginal bleeding points strongly against the existence of pregnancy.

Morning nausea is perhaps next in importance to amenorrhea as a symptom of pregnancy. It occurs in about 30 to 40 per cent of all cases. It may appear as early as the second week after the first missed period. Nausea and vomiting, may of course, be due to conditions other than those of pregnancy, such as gastro-intestinal disorders, or pathology extrinsic to the gastro-intestinal tract; or it may even result from purely psychic disturbances.

Symptoms of lesser frequency and of minor importance are those due to nervous instability, such as changes in temperament, and the well-known peculiar cravings for food. Other symptoms of lesser importance are increased salivation and a sensation of fullness and tingling or burning in the breasts; also frequency of urination and constipation.

In considering the signs of pregnancy it is presumed that the findings are elicited by the hand of an experienced examiner. One who performs pelvic examinations only occasionally is seldom competent in recognizing the early signs of pregnancy, and is even less capable of distinguishing such signs from those due to pathologic conditions simulating pregnancy. A discriminating sense of touch can properly be developed only through constant practice in bimanual examinations, performed for gynecologic as well as for obstetric conditions.

Among the clinical signs of early pregnancy the one of outstanding importance is softening of the isthmus or future lower uterine segment, known as Hegar's sign. The entire uterus and cervix, of course, undergo a marked softening, but the softening of the isthmus appears earliest, and is always more pronounced than that of the fundus and cervix. Under favorable circumstances this sign can be elicited by bimanual examination as early as the second or third week after the first missed period; and in the great majority of cases it becomes unmistakable within one or two weeks following the second missed period. However, under certain conditions, as in cases of obesity, or when the coöperation of the patient is unsatisfactory, it may be difficult to recognize this sign until a later period.

Softening of the cervix becomes noticeable one or two weeks after Hegar's sign is first recognizable. The cervix of the nonpregnant state is almost of cartilagenous consistency. During pregnancy it undergoes a marked softening, approaching the consistency of the surrounding soft tissues (Goodell's sign). At the same time there is a rapid growth in the body of the uterus, so that within one or two weeks after the second missed period it attains approximately twice its ordinary size. Closely associated with the growth in size there is a uniform softening of the uterus; the organ becoming of cystic consistency and of spherical contour by the time the third menstrual period is missed.

At the end of the third month of pregnancy a generalized bluish discoloration of the vaginal mucosa and cervix becomes noticeable in most cases. This is generally referred to as Jacquemin's or Chadwick's sign. At this stage of pregnancy, intermittent painless contractions of the uterus also begin to appear (Braxton-Hicks sign).

The above description of the symptoms and signs of early pregnancy applies only to the normal, uncomplicated condition of the pelvic organs. There is an endless variety of possible coexisting pathologic conditions which may modify or mask one or more of the important signs. Conversely, there are many pathologic conditions which may present signs indistinguishable from those of pregnancy. Space does not permit a discussion of more than a few of the more important of these complicating conditions.

Hegar's sign may be modified by a distortion or an induration of the lower uterine segment due to the presence of a fibroid in the isthmus. A coexisting pregnancy may, therefore, be overlooked. On the other hand, the presence of a fibroid or other neoplasm in the fundus, associated with a sharp retroflexion, may result in a marked passive congestion, and considerable softening of the isthmus, which may lead to a wrong diagnosis of pregnancy.

Goodell's sign, softening and enlargement of the fundus, and cyanosis of the mucosa, are even more apt to be simulated by conditions other than those of pregnancy. Fibroids and other uterine neoplasms, or even pelvic conditions of inflammatory origin which cause pelvic congestion, may produce all of these signs. With fibroids or other new growths there is, however, usually an induration rather than a softening, and even in cases of cystic degeneration the softening is limited to definitely circumscribed areas and lacks the uniformity characteristic of pregnancy.

Softening and enlargement of the uterus, which sometimes occur in pelvic inflammatory disease, are usually associated with pain, tenderness, adnexal thickening, and fixation of organs. The same is true of tubal pregnancy.

Subinvolution, which often persists for months after an abortion or a puerperal infection, may mimic very closely the softening and enlargement of the normal pregnant uterus. The same may be said of the findings in a hematometra or in a pyometra. On the other hand, a pregnancy in an incarcerated retroflexed uterus may be confused with a pelvic hematocele or a chronic pelvic abscess.

Pathologic conditions of the adnexa, particularly a cystic ovary or a hydrosalpinx located in the anterior or in the posterior cul-de-sac may easily be mistaken for a pregnant uterus, unless a careful search is made for the relatively small displaced hard uterus. Even a full bladder in an obese or poorly coöperative patient may be confused with a two or three months' pregnancy.

The remaining signs of early pregnancy are less constant and less characteristic. Among these may be mentioned the breast signs, which consist of a uniform enlargement of both breasts, a hypertrophy of the tubercles of Montgomery, an increased pigmentation of the primary and secondary areolae, and a secretion of collostrum. Another of the signs of minor importance is pigmentation of the face, the so-called "mask of pregnancy."

Of the many laboratory tests proposed, the Aschheim-Zondek hormone test is the only one which has gained universal recognition as a dependable sign of pregnancy. Its value is particularly great when a diagnosis must be made early in pregnancy—during the second or third week after the first missed period, since at this early stage Hegar's sign is still negative or doubtful in most cases. The hormone test may also prove to be of material assistance later in pregnancy, in the differential diagnosis of surgical conditions of the abdomen, particularly under circumstances where the history is atypical or unreliable, or when the important signs are not definitely positive. Under ordinary circumstances, however, it should seldom be necessary to resort to the hormone test after the second month, since at this stage of pregnancy the symptoms are usually unmistakable and the signs are strongly positive.

Needless to state, a diagnosis of pregnancy should never be made on the basis of the laboratory report exclusively. The physician should rather make a serious attempt to arrive at a diagnosis on the basis of clinical evidence alone, since the laboratory test involves loss of time, is an added expense to the patient, and, most important of all, it is not infallible. Furthermore, the clinician must study symptoms and signs for the sake of his own mental discipline, since too quick an acceptance of a ready-made diagnosis handed down from the laboratory inevitably tends to impair his diagnostic acumen.

* * *

Edward N. Ewer, M. D. (251 Moss Avenue, Oakland). — A fertilized ovum lodged in the uterine tube may rupture when but ten or fifteen days old. The next menstruation may be a few days overdue, or there may be no period of amenorrhea before the rupture. Such a condition would be impossible of diagnosis in advance of the accident. So, in some cases, it is evident that "early diagnosis" resolves itself into the interpretation of a sudden abdominal crisis of major proportions.

Fortunately, the behavior of the misplaced ovum, in the majority of cases, is such that its presence can be determined before the danger stage is reached. Attention may be attracted by some of the usual symptoms of early pregnancy, but they do not correlate true to form. One month amenorrhea is noted in about 60 per cent; nausea, pain or tingling in the breasts with colostrum in about 15 per cent; softening of cervix, but not Hegar's sign, occasionally; and cyanosis of the vaginal mucosa occasionally. If pronounced, most of these signs indicate intra- rather than extra-uterine pregnancy. Increased anteflexion of the uterus, with slight enlargement not commensurate with the stage of pregnancy, is often found.

Lorrincz suggested in 1928 that a *uterine* gestational enlargement could be differentiated, if easily palpable, by the intravenous injection of small amounts of posterior pituitary extract, and noting bimanually the immediate contraction of the organ.

The studies of many case series show that about one-third of the patients had had pelvic operations, and the same number gave a history of pelvic infections, usually of mild degree.

The first symptoms of direct diagnostic importance occur when some disturbance begins in or about the aberrant gestation sac. The beginning of tubal abortion, or slight rupture with seepage of blood into the peritoneal cavity, causes pain and usually the beginning of the well-known menstrual irregularities. These two symptoms—pain and uterine bleeding—are often coincident. They are both subject to remissions. The pain is severe, moderate or slight, and is described as colicky in over one-half, lancinating in one-third, and aching in the rest of the cases.

The bleeding, as a rule, is less profuse than in the abortion of an intra-uterine pregnancy, and the blood is not so bright. It is usually of a brownish viscid character. Shreds of decidua may be found in the discharge, but whole uterine casts generally only follow sudden complete rupture or operation upon the tube. Casts or large portions of decidua are not often discovered.

If a curettage is done under the belief that uterine abortion is taking place, decidua may or may not be found. Many investigators state that its formation in the uterus is not constant. If decidua without villi is secured by curettage or in the discharge, it is of diagnostic importance. Of course, if villi are found, it is assumed that an ovum must have been implanted in the uterus.

If the bleeding has been sufficient to warrant the belief that an intra-uterine ovum if present is disrupted, many countenance diagnostic curettage. Especially may this be agreed to if at the same time a suspicious noninflammatory mass in the pelvis can be palpated, and preparations are made to follow with abdominal section if ovum tissue is not found.

A mass not palpable before interruption may often be sufficiently swollen by bleeding in and around it to be palpable thereafter. The mass is likely to be boggy, movable, and not markedly tender.

Many curettements in the presence of extra-uterine pregnancies have been done in the belief that the bleeding was due to incomplete uterine abortions; and through negligence in not securing proper laboratory identification of the tissue, tubal pregnancy has been allowed to progress till frank rupture had occurred. All tissue removed should be examined for villi, if the supposed ovum is not grossly and with certainty identifiable.

After such curettage has been done the pain continues or reappears, bleeding will soon recur, and careful palpation will then disclose the tubal mass which was not discernible at the time of the curettage. The writer has seen two such cases in which it was thought the palpable mass was tubal inflammatory reaction caused by the curettage. Blood sedimentation tests eliminated that fear in each instance.

In view of the frequency of tubal inflammation in the history of these patients, it is not perhaps surprising to note in hospital statistics the frequency of the admission diagnosis of acute salpingitis. The next most frequent mistake in diagnosis seems to be incomplete abortion. Twisted pedicle ovarian cysts are sometimes confusing and, like tubal pregnancies, they present slow sedimentation rates. They may also be attended by vomiting, rapid pulse, and shock. Time is a factor in evaluating sedimentation rates and neglected cysts becoming infected, and old degenerating hematoceles may be attended with rapid rates, as in salpingitis.

The leukocyte count is generally considered of no importance. It may be as low as 5,000 or as high as 40,000. Fever is not common in early cases.

Along with or after the appearance of the conditions described come the symptoms associated with internal hemorrhage. They depend in severity upon the amount and suddenness of the hemorrhage. They are pain, moderate to severe, often sudden in onset, *faintness,* shock or collapse, thready rapid pulse, pallor, and air hunger. Faintness is an important symptom and is present in some degree in every case. Shoulder or chest pain (Lafont sign), a reflex from subdiaphragmatic peritoneal irritation by the blood, is said to be present in 10 per cent of the cases, and indicates free bleeding. The amidopyrin test for internal hemorrhage is described as positive in over 90 per cent of the cases. Aspiration of the pouch of Douglas through the vaginal vault is comparatively safe, but many prefer a more thorough and certain exploration through a colpotomy opening. In the latter case, where blood is found, it is advisable to stitch the opening to prevent infection, and treat through an abdominal section.

In tubal abortion, or even tubal rupture, the amount of blood may be small; but its presence invariably causes faintness and pain.

A typical case of tubal abortion, in contrast to the fulminant or so-called "tragic" condition mentioned at the beginning of this discussion, occurred as follows: A woman of twenty-five, who had missed a period by a few days, felt suddenly faint upon attempting to get out of bed. She walked across the room, complained of pain in the lower abdomen, lay down upon a couch and remained there several hours. The faintness soon disappeared; but the pain, while less severe, continued. Her physician was finally called, tubal pregnancy was diagnosed and, upon operation, a small ovum was found protruding from the tubal ampulla, and an ounce or two of small clots were present in the pelvis. Early diagnosis and treatment possibly forestalled further and more dangerous bleeding.

Summary.

1. The first symptoms are due to some disturbance of the growing ovum in the tube. They are faintness, pain, and irregular, usually scanty, uterine bleeding.

2. The history often discloses previous pelvic inflammatory disease or lower abdomen operative procedures.

3. There is a history of at least one missed menstruation in over half the cases. Other early symptoms of pregnancy are quite unreliable.

4. Tubal pregnancies are often confused with tubal inflammations and uterine abortions. Sedimentation tests will identify the former, and tissue examinations the latter.

5. Pulse, blood pressure and temperature changes are not early phenomena.

6. When internal hemorrhage is suspected, the amidopyrin urine test and aspiration of the cul-de-sac may be valuable.

7. Most palpable noninflammatory masses in the pelvis call for laparotomy. Especially is this true both for diagnostic and treatment purposes when such masses are associated with signs of ectopic pregnancy.

* * *

Adolph W. Kosky, M. D. (704 Bay Cities Building, Santa Monica).—With the perfection of the Aschheim-Zondek pregnancy test and its modifications, determination of the gravid state has become very much simplified.

However, there are still some points of differential diagnosis which one must take into account. Furthermore, in this question, as in others, we must not lose sight of the clinical side of medicine, even though our laboratory aids have become of great importance and value.

Probably the most common source of confusion in the early diagnosis of pregnancy results from the presence of uterine myomata of the interstitial or submucous variety. Usually the regular recurrence of menstruation or the presence of menorrhagia helps to decide the diagnosis of a neoplasm. The uterine tumor is harder and firmer in consistency; its growth is slower and Hegar's sign is absent.

If pregnancy exists concomitantly with a myoma, then frequently a positive diagnosis can only be made through one of the laboratory tests.

Extra-uterine pregnancy may be difficult to differentiate from intra-uterine pregnancy, with threatened abortion. The laboratory tests give the same results in both instances: positive if fetal life still persists, and negative if death has supervened within eight or ten days previous to the time of making the test.

Where history and physical examination do not make the diagnosis clear, I believe that one is justified in exploring the uterine cavity first. Its contents should indicate the presence or absence of gestation elements, and thus make the diagnosis sure.

An ovarian cystoma may prove puzzling, although on careful examination the uterine fundus may be found displaced in some direction and the tumor is found in one of the lower lateral quadrants; it also is more fluctuating than is the gravid uterus.

A large ovarian cyst may also be confused with a polyhydramnios, but the absence of fetal movements and heart tones should make the diagnosis clear.

Malignant diseases commencing in the cervix may be mistaken for pregnancy, although the early changes which take place in the cervix, the development of a foul, bloody discharge, and the characteristic systemic symptoms of malignancy should establish the diagnosis. A uterine sarcoma is also most difficult to differentiate, because of the symmetrical enlargement of the uterus and the amenorrhea which it produces.

A prolapsed kidney or spleen may simulate a pregnancy until the prolapsed organ is replaced and the outline of the uterus is palpated bimanually.

Sometimes difficulty arises in differentiating between ascites and pregnancy with excessive amniotic fluid. Also tuberculous peritonitis, with encysted fluid, may give findings similar to amniotic fluid. Here again, careful history of the case and failure to recognize fetal heart sounds and movements help establish the diagnosis.

During the early months, pregnancy must also be distinguished from hematometra, pelvic inflammatory swellings of the ovaries and broad ligaments, as well as exudates of an inflammatory nature; also from pyometra, cystic and solid tumors of the adnexal regions and chronic metritis.

* * *

Gertrude Moore, M.D. (2404 Broadway, Oakland).—For centuries scientists have searched for a satisfactory, practical laboratory method for the early diagnosis of pregnancy, with naught but failure until the development of the hormone test now in common use. This test is based upon the facts that the anterior pituitary increases in size and functional capacity during pregnancy, and that the abundance of hormone so produced is excreted in sufficient concentration in the urine to produce, in properly selected animals a maturing of the Graafian follicle, ovulation, and luteinization.

In order that any test for pregnancy be acceptable in practice, it must be universally present in this condition, and must not exist in other common conditions; or if it does so exist, these conditions must be easily differentiated from pregnancy, or be so rare as to be inconsequential. A review of the literature shows that the test lives up to this high standard, for in the hands of numerous workers, over a period of years, it has given an accuracy of from 95 to 99 per cent. This is a splendid showing indeed, and attests the fact that it is built on a sound scientific premise; but it is a biologic test, and by the very nature of things cannot be 100 per cent perfect.

Its usefulness in the hands of the practicing physician depends upon a clear understanding of its fallacies, and a knowledge of the conditions under which false negatives or false positives may be obtained. False negatives may be divided etiologically into two main groups: (1) biologic faults in the patients, and (2) errors in technique. Biologic faults in the patient fall, naturally, into two classes—those conditions in which the hormone is not produced in sufficient quantity to give a positive test, and those in which a hormone produced in adequate quantity is not excreted in concentrated form.

It is well known that anterior pituitary hyperactivity begins very early in pregnancy, as soon as the ovum is implanted, but the time required to reach a high concentration varies in different individuals and, in our experience, does not reach a satisfactory high level before the end of the fourth week of pregnancy. We realize that the literature tells us that the test should be positive at the first missed menstrual period, but in this our experiences differ from those of other workers.

It is quite evident that an inactive or pathologic pituitary may be so inadequate as to give a false negative test. Such an endocrine disturbance may be limited to the pituitary, or it may involve the entire endocrine chain. If this occurs, thyroid dysfunction commonly predominates the picture, and pathology of the anterior pituitary is made out only upon careful study. Frequently patients are encountered with clinical evidences of endocrine pathology, either purely pituitary or polyglandular in type, who, though pregnant, fail to give positive tests until the pregnancy is far advanced.

Lack of concentration of the hormone in the urine is, in the main, due to kidney dysfunction. It is common practice to use as the test specimen the first urine of the morning—that is, the concentrated night urine—for the reason that the hormone must be present in a fairly high degree of concentration. Patients who are suffering from kidney disturbances, and are therefore unable to concentrate their urine, will present us with specimens wholly inadequate. Likewise, it must be remembered in this connection that certain individuals have a high kidney threshold for the hormone, and it is not excreted in a form sufficiently concentrated to induce the ovarian changes in the rabbits until late in the pregnancy.

The only errors in technique of interest to the clinician are those related to the details of obtaining and handling the specimens. It is a well-known fact that urines which contain sufficient hormone to give positive findings will become inactive in this particular if allowed to stand at a moderately high temperature for a few hours, and a false negative finding may result. It is necessary, therefore, that the urine reach the laboratory as soon after voiding as possible, or if this is impossible, that it be chilled promptly and so kept until it is delivered to the laboratory. It is quite important to be sure that the urine is the urine of the patient in question, especially if there is any medico-legal problem under consideration.

While false negatives are distressing enough, false positives are of much graver significance and would render the test valueless if they occurred; but they do not worry the laboratory worker for the reason that there is only one group of conditions which may cause confusion, and this group, as will be seen later, may be differentiated from normal pregnancy. There are, however, a few conditions which must be mentioned for completeness, and which may confuse us if we are not aware of them.

First, patients transfused with the blood of pregnant women will give a positive reaction in from two to twenty hours. While this is an interesting phenomenon, it is of no practical importance for the reason that pregnant women are not commonly used as donors, and women who have recently received transfusions are not commonly immediately subjected to tests for pregnancy. Second, patients receiving anterior pituitary hormone injections will give positive findings, but this, of course, is not important for the reason that the physician administering the hormone will not undertake a test to determine its presence. Third, it is said that occasionally false positives occur at the menopause, due to the vigorous attempt on the part of the pituitary to stimulate a dying ovary. While the pituitary is particularly active under these conditions, it does not produce hormone in sufficient quantity or type to give reactions which are confusing in the hands of competent workers. Fourth, we come to the only group of conditions which gives true false positive reactions. They are hydatidiform mole and chorio-epithelioma. But these two conditions give some clinical evidence of their presence and, when suspected, they may be differentiated from normal pregnancies by the dilution test. For it is a well-known fact that the hormone exists in these conditions in a concentration of from ten to fifty times that found in normal pregnancy.

Summary.

1. Do not attempt the test until pregnancy is from four to six weeks old, unless there is some such urgent need as a suspected ectopic gestation.

2. If the test is negative and conditions warrant, repeat in one or two weeks. A somewhat longer period would be allowed in cases of endocrine dysfunction.

3. Be sure that the urine is the concentrated night specimen, submitted fresh, and that it is the urine of the patient.

4. Be sure that the patient is receiving no anterior pituitary hormone injections.

5. If there is any evidence of chorio-epithelioma or hydatidiform mole, titer the urine.

6. Be sure that the test animals are sufficiently mature to permit of stimulation, that they have been kept in isolation for a period of thirty days, and that more than one animal is used for each test.

California and Western Medicine
Owned and Published by the
CALIFORNIA MEDICAL ASSOCIATION
Official Organ of the California and Nevada Medical Associations
FOUR FIFTY SUTTER, ROOM 2004, SAN FRANCISCO
Telephone Douglas 0062
Address communications to the EDITOR, as per the above address.

EDITOR . . . . GEORGE H. KRESS
Associate Editor for California . . . . EMMA W. POPE
Associate Editor for Nevada . . . . HORACE J. BROWN

Advertising Representative for Northern California . . . . L. J. FLYNN, 544 Market Street, San Francisco

Subscription prices, $5.00 ($6.00 for foreign countries); single copies, 50 cents.

Volumes begin with the first of January and the first of July. Subscriptions may commence at any time.

Change of Address.—Request for change of address should give both the old and the new address. No change in any address on the mailing list will be made until such change is requested by county secretaries or by the member concerned.

Advertisements.—The journal is published on the seventh of the month. Advertising copy must be received not later than the 15th of the month preceding issue. Advertising rates will be sent on request.

Responsibility for Statements and Conclusions in Original Articles.—Authors are responsible for all statements, conclusions and methods of presenting their subjects. These may or may not be in harmony with the views of the editorial staff. It is aimed to permit authors to have as wide latitude as the general policy of the journal and the demands on its space may permit. The right to reduce or reject any article is always reserved.

Contributions—Exclusive Publication.—Articles are accepted for publication on condition that they are contributed solely to this journal.

Leaflet Regarding Rules of Publication. — California and Western Medicine has prepared a leaflet explaining its rules regarding publication. This leaflet gives suggestions on the preparation of manuscripts and of illustrations. It is suggested that contributors to this journal write to its office requesting a copy of this leaflet.

EDITORIALS*

FEDERAL EMERGENCY RELIEF ADMINISTRATION—CALIFORNIA MEDICAL ASSOCIATION COÖPERATION

The Problem of the Federal Emergency Relief Administration. — The large number of citizens who have been unemployed for such long periods that their financial resources are today practically *nil*, during the last year has become so serious a matter to both state and local governments that the Federal Emergency Relief Administration has found it necessary to take an active part in handling the situation.

The Federal Government has decreed that its moneys, when provided for unemployment relief by state and local committees, may also be used for medical relief, subject to certain principles and rules to be drafted for each commonwealth through its state emergency relief administrator. The new federal rules make it possible to give professional services in medicine and surgery to unemployed persons, in their homes, just as if they were patients, in private practice, who called in their own physicians and themselves paid for the professional services rendered.

Nature of the Federal Medical Relief to Unemployed Citizens.—It must be remembered that what is here commented upon is home care, not hospitalization, and of special interest are the September rules of the Federal Emergency Relief Administration set forth under its "Policy," containing the following important paragraphs:†

> 1. *Policy.*—A uniform policy with regard to the provision of medical, nursing, and dental care for indigent persons in their homes shall be made the basis of an agreement between the relief administration and the organized medical, nursing, and dental professions, state and/or local. The essence of such a policy should be:
>
> (*a*) An agreement by the relief administration to recognize within legal and economic limitations the traditional family and family-physician relationship in the authorization of medical care for indigent persons in their homes; the traditional physician-nurse relationship in the authorization of bedside nursing care; the traditional dentist-patient relationship in the authorization of emergency dental care; and
>
> (*b*) An agreement by the physician, nurse (or nursing organization) and dentist to furnish the same type of service to an indigent person as would be rendered to a private patient, but that such authorized service shall be a minimum consistent with good professional judgment and shall be charged for at an agreed rate which makes due allowance for the conservation of relief funds.
>
> The common aim should be the provision of good medical service at a low cost—to the mutual benefit of indigent patient, physician, nurse, dentist, and taxpayer. . . .

* * *

How the California Medical Association Has Coöperated.—In California the State Emergency Relief Administrator, Mr. R. C. Branion, has already held a number of conferences with representatives of the California Medical Association, and with their coöperation worked out a plan of operation. As a further result, at a meeting of the Executive Committee on August 19, Dr. T. Henshaw Kelly, chairman of the Association Council, submitted a plan and rules for use in California; and the Council, at its meeting in Los Angeles on September 30, 1933, approved the same. This plan, as outlined under Item 3 of the minutes of August 19, is printed in the Miscellany department of this issue (page 358).

The drafting of these rules meant much work for those officers of the California Medical Association who had the matter in hand. An earnest effort was made to visualize all aspects of the needs of the unemployed who were sick, and by the establishment of mutual and harmonious relations and coöperation with the Department of the California Relief Administrator, Mr. R. C. Branion, to provide them with adequate medical care.

COUNTY HEALTH AND INSTITUTIONS COMMISSIONS—SANTA CLARA'S EXAMPLE

The Value of an Institutions Commission.—In Santa Clara County a new charter has been under consideration by a duly elected Board of Freeholders. Alert to its responsibilities, the Santa Clara County Medical Society, in coöperation with social workers and nurses' organizations, recently held a meeting at San Jose, to which the members of the board were invited, and at which addresses were made on the problem of the care of the sick who were also indigent. The meeting was held upon the suggestion of President Reinle, who, with other officers of the California Medical Association who were present, spoke on the topics under consideration.

---

* Editorials on subjects of scientific and clinical interest, contributed by members of the California Medical Association, are printed in the Editorial Comments column, which follows.

† For the basic rules and regulations governing medical care provided in the home to recipients of unemployment relief, see *Journal of the American Medical Association*, September 23, 1933, page 1026.

The *Bulletin of the Santa Clara County Society* printed the proceedings of that meeting. Dr. Benjamin W. Black, Director of Public Institutions of Alameda County, discussed at some length a few of the problems which arise in the care of the indigent sick; and he very properly called attention to the value of the Alameda County Institutions Commission.

Practically every county of California of any considerable population could profit from the establishment of such an institutions commission, one of the primary objects of which is (as regards institutions and administrative departments having to do with the indigent) to eliminate as far as possible those political influences in charitable and public welfare work which, as experience has amply shown, nearly always act in deleterious fashion. That there is an Alameda County Institutions Commission is largely due to an ex-president of the California Medical Association, Dr. O. D. Hamlin of Oakland, who years ago worked with might and main to bring what was then a new plan of organization into existence. His wise forethought has been more than justified by the accumulating evidence of each additional year's experience with the Alameda County Institutions Commission.

* * *

The Santa Clara County Medical Society Has Set an Excellent Example.—The members of the Santa Clara County Medical Society are to be congratulated, therefore, for the steps they have taken to give their own Board of Freeholders that information which is so essential, if the best possible set-up for medical and public welfare work is to be provided in the new county charter. It is our belief that provision for a County Health and Institutions Commission is most worthy of insertion therein.

The Santa Clara County Committee on Medical Sections of the County Charter, having devoted much thought to the subject, has made a tentative draft of the sections which would provide for a county health and institutions commission. This seems to have been carefully drawn and should have suggestive value for other counties which may wish to take up a study of an institutions commission plan. For those who wish to learn more concerning this Alameda Institutions Commission plan, it may be stated that comment has been previously made thereon in CALIFORNIA AND WESTERN MEDICINE.*

* * *

Tentative Draft of the Institutions Commission Sections.—Because of the importance of the subject, the tentative outline which has been suggested for Santa Clara is printed below:

COUNTY HEALTH AND INSTITUTIONS COMMISSION

Section 1. *Health and Institutions Commission.*—There is hereby created a County Health and Institutions Commission consisting of seven members, all of whom shall be bona fide residents of Santa Clara County. The Commission of Health and Institutions shall consist of two regularly licensed and practicing physicians, one duly licensed and practicing dentist, the County Executive (Manager), who shall act as chairman of the Commission, the County Superintendent of Schools, and two other members not members of the medical or dental profession.

The medical and dental members of said Commission shall be selected in the following manner: The Board of Supervisors shall, by resolution, request the Santa Clara County Medical Society to certify to the Board, the names of four or more physicians who are specially fitted by education and experience for the duties devolving upon said Commission, and the Board of Supervisors shall appoint two of the physicians so certified, as members of said Commission.

And likewise the Board of Supervisors shall request the Santa Clara County Dental Society to certify to the Board, the names of two or more dentists who are specially qualified by education and experience for duties devolving upon said Commission, and the Board of Supervisors shall appoint one of said dentists so certified as one of the members of the Commission.

Should either of said societies refuse or neglect for a period of thirty-five (35) days after a request to certify names, the Board of Supervisors shall appoint the medical or dental members of the said County Health and Institutions Commission, as the case may be, from the regular practitioners of such profession in Santa Clara County.

The two laymen members shall be electors of the county and shall be selected annually by the other members of the Commission; one shall be from the first supervisor district, and one from the fifth supervisor district.

The term of office of the medical and dental members of the County Health Institutions Commission shall be for three years from and after the date of appointment and qualification, provided, however, that the term of office of the medical and dental members first appointed shall be determined by lot so that one thereof shall retire in one year, one in two years, and one at the end of the third year.

Should a vacancy occur in the County Health and Institutions Commission, the same shall be filled in the manner herein provided for appointment to the Commission in the first instance.

Said Commission shall serve without compensation.

Section 2. The County Health and Institutions Commission shall have the responsibility for all activities pertaining to health, sanitation, treatment of indigent sick, and such other allied medical activities as may be assigned to them by the Board of Supervisors in Santa Clara County, or by general law. They shall have power to enforce such rules and regulations governing the conduct of their department through the Director of Health and Institutions as may be determined for the efficient operation of the department.

The said Commission shall determine the services to be rendered to the indigent sick and dependent poor of Santa Clara County and shall establish and maintain such hospitals, clinics, and other services, including the establishment of homes and home service, or other places for custodial or clinic care as may be required on the part of Santa Clara County for the purpose of carrying out the provisions of this article. They shall make rules for the admission of patients and cover the care of such cases who may be entitled to receive medical aid, including medical services, dental services, prosthetic appliances necessary for the treatment of the sick and such other services as need be rendered by the county of Santa Clara.

Said Commission shall establish a County Health Department and shall make rules and regulations to permit adequate disease prevention and the promotion of public health within the boundaries of said county, and shall be empowered to correlate and coördinate all agencies engaged in such work in Santa Clara County, including public, private, and semiofficial agencies.

---

* Vol. 37, No. 5, pp. 330, 354 (November), 1932.

The Commission shall assume the responsibility for the expenditure of all funds appropriated or allocated by the county of Santa Clara for all medical and dental services required on behalf of such county and for the prevention and control of disease and for the promotion of public health, and shall administer such funds as may be entrusted to their care on the behalf of the county of Santa Clara, to carry out the necessary functions of said Commission.

The Commission shall be vested with such powers and functions and shall perform such duties as now or hereafter may be vested in and conferred upon them by the general law or ordinance of the Board of Supervisors. The action of said Commission at any time shall be made a matter of record for the guidance of the Director of Health and Institutions.

Section 3. *Director of Health and Institutions.*—The County Manager (executive) shall, upon the recommendation of the Commission of Health and Institutions, appoint a Director of Health and Institutions. Said director shall be a regularly licensed physician and surgeon in the state of California and he shall have served as a physician and surgeon for sufficient time to justify the conclusion that he is professionally qualified to hold such position. He shall be deemed to have executive ability and satisfactory public health training or experience sufficient to supervise the Department of Health and Institutions. He shall devote his full time to his duties and shall have direct supervision over the department under the general direction of the Health and Institutions Commission. He shall serve as executive officer of said Commission and shall have the power to appoint, suspend or remove any person in his department subject to the approval or review of the Health and Institutions Commission.

He shall, upon the recommendation of the Commission, create such positions and offices and establish the basic salary to be paid to the persons holding such positions throughout the entire organization. He shall be empowered to establish such agencies and departments in order that the function established by law may be properly carried out.

He shall act as county health officer and shall have immediate supervision of the work of all health, sanitation, and other activities which the county has or may hereafter establish.

He shall, with the approval of the Health and Institutions Commission, carry out any contracts with any municipalities within the county which at present exist through contract or by consolidation. He shall, with the approval of the Commission, be empowered to make contracts with municipalities and other governmental agencies in order to carry out the efficient operation of the Health Department.

The Director of Health shall be vested with such other powers and functions and shall perform such other duties as now are, or hereafter shall be conferred upon him by general law or ordinance of the Board of Supervisors.

Section 4. *County Hospital.*—The Santa Clara County Hospital and other similar institutions operated by Santa Clara County shall be maintained for indigents only with such changes in function and organization as may be required and determined upon by the Commission.

The superintendent or medical director shall give full time to his duties, and shall have immediate administrative supervision over the hospital and all its services and such additional duties as may be assigned to him which may require medical supervision as may be determined by the Director of Health and Institutions.

Section 5. *Social Service.* The Health and Institutions Commission is empowered to create and establish a social service department, the functions of which shall be directly the responsibility of the Director of Health and Institutions. This department will generally assume the responsibility of making proper and adequate social investigations of all applicants for county care, whether in hospital, clinics, in the home or in such other institutions or places where indigent sick may be cared for by Santa Clara County.

SUPERIOR COURT DECIDES AGAINST PAY PATIENTS IN COUNTY HOSPITALS

County Hospitals Not Originally Intended for Pay Patients.—Several years ago a few county hospitals in California began to admit pay patients, in spite of the fact that the state law under which county hospitals are organized and maintained seemed plainly to indicate that these were institutions primarily intended for and limited to the indigent sick. Supervisors who had sanctioned such procedures, having committed themselves to such a line of action (not altogether displeasing, from certain political standpoints), appeared somewhat indifferent when the wording of the state law was called to their attention. In one or two counties these admissions of patients, presumably not legally eligible, took on very serious phases. Kern was one of the counties where the abuse was especially in evidence, culminating, finally, in a court action to determine what was the intent of the law.

* * *

The October Decision of Superior Judge Van Zante.—Just as the copy for the November California and Western Medicine is about to go forward to the printer, we are informed that Judge Van Zante of Kings County, sitting in the Superior Court of Kern County, has handed down a decision enjoining the Kern County Board of Supervisors from allowing pay patients (that is, non-indigents) to be admitted to the General Hospital of their county.

This is a most important decision, in which the medical profession is keenly interested. The issue in Kern County was brought to a head through the action of ten members of the medical profession who signed a complaint in which an injunction was sought to prevent what was claimed to be an illegal action of the Board of Supervisors. To secure an impartial verdict, an outside judge was brought into Kern County to hear the case, with the result above indicated.

* * *

Additional Information Concerning This Case. In the Miscellany department of this issue are printed some newspaper articles on this court action which give further information (see page 359).

It will be noted therein that it is stated an appeal will be made from the decision. As we understand it, the decision by Superior Judge Van Zante will stand and apply to all county hospitals in California, unless and until overruled by a higher court. In succeeding issues of California and Western Medicine, this subject may again be discussed. In the meantime it is pleasing to know that a judicial verdict has been rendered which is in harmony with what seems to be both the law and common sense, and which will be to the best interests of all classes of citizens.

ALAMEDA COUNTY PLAN

What the Alameda County Medical Society Plan Aims to Accomplish.—In the current issue of California and Western Medicine is printed an address by Dr. George G. Reinle, president of the California Medical Association, given at a recent meeting of the Long Beach Medical Society. (See page 289.)

Attention is called to President Reinle's remarks because the Alameda plan for the care of the indigent and near-indigent who are sick, as originated and carried on by the Alameda County Medical Society, is worthy of close study by all component county medical societies of the California Medical Association. The Alameda County Medical Society deserves commendation for having evolved and put into practice a method whereby adequate medical care is made possible for those citizens who, while not in the class of indigents, are nevertheless so financially handicapped that they lack the resources to pay even the minimum average fees for professional medical services. The Alameda plan helps these citizens to maintain their personal independence and self-respect, prevents them from slipping into the group and ways of indigents and paupers, and at the same time makes it possible for the physicians who care for this group of patients to receive moderate stipends for the professional services rendered. The plan is an excellent expression of what clear thinking can accomplish in producing a rather practical solution of a somewhat complicated social and medical-economic problem.

* * *

President Reinle's Progress Report on the Plan. During the last few months many observers have been watching the new experiment in Alameda County. Because the plan aims at one and the same time to safeguard the interests of the sick citizens, the members of the medical profession and the community at large, it had the good wishes from the start, not only of its local sponsors, but of many other members of the medical profession who were giving serious thought to similar problems. Therefore it has been gratifying to have President Reinle tell the profession that the system of procedure, as adopted by the Alameda County Medical Association, is working out well in practice as far as it has gone. If such a plan can be successful in Alameda County, with a five hundred thousand population, it should be possible to institute it, with or without modifications, in other communities having somewhat similar environments.

* * *

County Societies Should Study This Plan.—The thought suggests itself that every county medical society in California might well appoint a committee to make a survey of the manner in which its own county is handling its problems in the care of the indigent, the near-indigent, and the very low-bracket income sick. The committee so appointed could bring in a report on its findings not only on conditions which exist, but with recommendations as to a plan, or plans, whereby defects in existing systems might be remedied. Even if no changes were immediately recommended or authorized by the county societies, the discussion of such committee reports could not be other than of value to both the profession and the community. The California Medical Association has coöperated with the Alameda County Society in providing the plan with proper legal and other safeguards. County societies desiring additional information are invited to communicate with the Association secretary, Doctor Pope, or with the director of the C. M. A. Department of Public Relations, Doctor Dickie.

CALIFORNIA MEDICAL ASSOCIATION EXTENSION LECTURES

County society committees on scientific programs not infrequently desire to have guest speakers to address their respective organizations on topics of general or special interest. Years ago the pleasure of hearing such essayists was only experienced when a secretary or committee of more than usual energy had charge of the programs. To make possible the securing of such non-local talent for scientific meetings, the California Medical Association, through its secretary, Doctor Pope, has each year printed in California and Western Medicine a list of colleagues (with subjects of addresses which they were prepared to give) who could be called upon by county societies desiring guest-speaker presentations. The October California and Western Medicine, pages 277-280, printed this year's group of members who were prepared to speak on medical and surgical subjects, and the attention of members of the component county societies is again called to this list. On request, further information and coöperation will gladly be given by the Association secretary.

EDITORIAL COMMENT*

FLATULENT DIARRHEA ALLEGEDLY DUE TO MILK PASTEURIZATION

An exceedingly delicate hygienic question has been raised by Doctor Nelson[1] of the North Dakota Agricultural Experimental Station, who currently alleges that routine pasteurization of milk may at times so increase its infectious properties as to render it unfit for all but cooking purposes. His findings are reported, however, not as an argument against such pasteurization, but as a criticism of the popular misconception that all grossly contaminated raw milks are rendered fit for human consumption by this method of partial heat sterilization.

---

* This department of California and Western Medicine presents editorial comment by contributing members on items of medical progress, science and practice, and on topics from recent medical books or journals. An invitation is extended to all members of the California and Nevada Medical Associations to submit brief editorial discussions suitable for publication in this department. No presentation should be over five hundred words in length.

[1] Nelson, C. I.: J. Infect. Dis., 52:89 (Jan. and Feb.), 1933.

Doctor Nelson's conclusions were based on a study of several local epidemics of flatulent diarrhea in infants and adults. Hanging-drop preparations of liquid stools revealed many encapsulated diplobacilli, which were very active gas producers. "After fifteen to twenty minutes' incubation, microscopic globules of gas were seen gathering about the periphery of each diplobacillus. In the course of a half-hour's incubation, the bubbles were escaping from each bacillus much more rapidly than could be counted." By routine cultural methods this gas producer was identified as a spore-forming anaerobe closely resembling *Cl. welchii.* Examination of the pasteurized milks associated with these cases revealed the presence of the same gas-producing anaerobe.

Under the belief that the growth of intestinal anaerobes is normally inhibited by the presence of acid-producing bacteria, Doctor Webster's clinical associates placed these cases on a sour milk ("culture milk") diet. The diarrhea and flatulence are alleged to have yielded at once to this diet. In a few cases recurrence followed a return to normal diet, but subsided on resuming the use of sour milk.

While Doctor Nelson's clinical conclusions are open to several interpretations, he has rendered a valuable service to clinical science by dramatizing the fact that, thus far, insufficient attention has been given to the heat-resistant spores in contaminated milks. Many of these spores survive and may actually profit by pasteurization, routine heating destroying the inhibiting acidifiers, driving out much of the dissolved oxygen, and inactivating lactic antibodies.

Stanford University.

W. H. Manwaring,
Palo Alto.

THE NATURE OF ANESTHETIC SHOCK AND THE VALUE OF PREMEDICATION

It is well established that reduction in the volume of circulating blood is the centrally important factor in shock. Recently Freeman[1] has emphasized the fact that many influences known to produce shock, or to aggravate the condition if present, are also known to be adequate stimuli for producing hyperactivity of the sympathetic nervous system. Thus vasoconstriction or increased output of adrenin, both of which are indices of generalized sympathetic hyperactivity, are caused by hemorrhage, cold, fear, pain, asphyxia, infection, and low blood pressure. It has been shown directly that vasoconstriction and increased output of adrenin are present in shock. Now Freeman has shown that prolonged hyperactivity of the sympathetic system as produced by continuous injection of epinephrin, or as present in the pseudaffective state following decortication, causes a decrease in the volume of the circulating blood. This effect is prevented by ergotoxin paralysis of the sympathetic, and in the pseudaffective state by complete sympathectomy.

That ether anesthesia has an effect on blood volume was shown by Barbour,[2] who demonstrated concentration of the blood. That ether affects the sympathetic nervous system is a recent conclusion by Bhatia and Burn,[3] who, following Elliott's early demonstration[4] that the adrenin content of the adrenals is reduced by ether and chloroform anesthesia, have shown that these anesthetics produce widespread stimulation of the sympathetic nervous system.

Thus the conclusion is evident that the secondary or delayed shock that may be produced by prolonged anesthesia with ether or chloroform is due to a concentration and reduction in volume of the circulating blood resulting from general stimulation of the sympathetic nervous system, including the outpouring of adrenin.

There has been an increasing amount of evidence that a number of drugs used as basal anesthetics or hypnotics, such as amytal, avertin, have a pronounced effect on the autonomic nervous system, centrally and peripherally. Particularly has the effect of amytal been studied on the experimental production of hyperglycemia. The administration of amytal is known to inhibit the hyperglycemia ordinarily brought about by asphyxia and by morphin,[5] presumably by preventing the reflex liberation of adrenin from the adrenals. Banerji and Reid[6] have just shown that in the hyperglycemia caused by ether and chloroform, the adrenals are importantly concerned, and have again demonstrated that such production of hyperglycemia is inhibited by amytal.

Does amytal, with related substances, prevent the general hyperactivity of the sympathetic nervous system that ether and chloroform produce? If they do, and there is some such evidence for such a conclusion, then their use as basal narcotics receives important support in that the tendency of such volatile anesthetics to produce shock may be markedly counteracted.

Pharmacological Laboratory,
University of California.

P. K. Knoefel,
San Francisco.

THE MECHANISM OF TRAUMATIC SHOCK

The mechanism of traumatic shock is being subjected to renewed scrutiny. The recent interest in this perennially important subject is due to the obvious analogy between shock and adrenal cortical insufficiency. In both, the loss of fluid from the vascular system seems to be the underlying cause of symptomatology. The classically accepted theory that the production of histamin in the tissues by trauma increases capillary permeability, permitting the escape of fluid from the vascular bed, is now being questioned. Freed[1] has shown that rats, which are very resistant to histamin, are not shocked by extensive trauma unless they have been previously adrenalectomized. Despite the fact that adrenalectomy includes removal of both the adrenal cortex and medulla, he seems to feel along with Marmorston-Gotterman and Perla[2] that the cortical hormone is the important factor in preventing histamin shock.

---

[1] Freeman, N. E.: Amer. Jour. Physiol., 103:185, 1933.

[2] Barbour, H. G., and Bourne, W.: Amer. Jour. Physiol., 67:399, 1924.

[3] Bhatia, B. B., and Burn, J. H.: Jour. Physiol., 78:257, 1933.

[4] Elliott, T. R.: Jour. Physiol., 44:374, 1912.

[5] Evans, C. L., Tsai, T., and Young, F. G.: Jour. Physiol., 72:1931. Olmstead, J. M. D., and Giragossintz, G.: Jour. Lab. and Clin. Med., 16:354, 1931. Brill, S.: Proc. Soc. Exper. Biol. Med., 27:265, 1930.

[6] Banerji, H., and Reid, C.: Jour. Physiol., 78:370, 1933.

That the sympathetic nervous system must be considered in attempting to explain the mechanism of shock is evident from the observations of Freeman, Morrison, and Mackay-Sawyer.[3] These workers produced shock by dehydration of rabbits with hypertonic glucose, and found that such dehydration increases the rate of the denervated heart. The sequence of events is as follows: dehydration produces increased viscosity of the blood which in turn produces anoxemia, already shown to give sympathetic stimulation. Sympathetic stimulation results in increased secretion of epinephrin, which increases the rate of the denervated heart; thus demonstrating that dehydration produces sympathetic stimulation.

In shock the vicious circle is completed by the observation that prolonged sympathetic hyperactivity producing vasoconstriction reduces blood flow in large areas of the body, resulting in anoxemia and increased permeability of the smaller blood vessels with the loss of proteins and fluid.

In view of these newer observations the rôle of histamin in the increase of capillary permeability in shock is in need of reconsideration.

1136 West Sixth Street.

Hyman Miller,
Los Angeles.

---

[1] Freed, S. C.: Proc. Soc. Exp. Biol. and Med., 30:677 (Feb.), 1933.

[2] Marmorston-Gotterman, J., and Perla, D.: Proc. Soc. Exp. Biol. and Med., 28:1022, 1931.

[3] Freeman, N. E., Morrison, R. S., and Mackay-Sawyer, M. E.: Amer. Jour. Physiol., 104:628, 1933.

Telescopic Lenses for "Near-Blind."—False hope has been created among many of the blind, their families and their friends throughout the United States by the widespread newspaper publicity given to the announcement in Chicago on December 18 that telescopic spectacles have been perfected which can restore vision to 40 per cent of the present classified blind population. In response to the numerous inquiries on this subject which have come to the offices of the American Foundation for the Blind and the National Society for the Prevention of Blindness, respectively, these organizations wish to make the following statement, based on their investigation:

The experience of ophthalmologists who have done much work with telescopic spectacles indicates that the true percentage of those now classified as blind who can be helped by the use of this device—but who cannot be helped by ordinary spectacles—is not 40 per cent, but much less than 5 per cent. The assumption that practically all cases of low vision are capable of being improved by mere enlargement of the images on the retina is false. The group of the "near-blind" includes a large number of persons whose vision is obstructed by opacities, of persons whose optic nerves or retinas have lost practically all sensitiveness, of persons whose eye diseases would be aggravated and blindness precipitated by excessive use of the eyes, and many others who cannot be helped by any optical device.

Moreover, it happens frequently in the experience of ophthalmologists that a person to whom the physician is able to give improved vision with telescopic lenses is unable to actually make use of them in daily activities. The unfounded claims regarding the extent of their usefulness is particularly unfortunate in that it raises false hopes among the blind. Persons who are helped may find them a great boon, but the number of such persons is relatively small.

There is really no "great discovery" in the use of magnifying glass for spectacles. The first attempts to improve vision by applying the magnifying principle of the telescope to spectacles were made about three hundred years ago. For more than twenty years American ophthalmologists have been using telescopic spectacles in their regular practice.

The only change now proposed is the substitution of cylindrical lenses for the usual spherical lenses—enlarging the vertical dimensions of images by 30 per cent, while enlarging their horizontal dimensions 80 per cent. This will improve the patient's ability to judge distance and space correctly, it is claimed, and thus make it easier and safer to walk about while wearing the spectacles. Upon examination, this claim does not appear to be justified for several reasons.

In the first place, objects will appear closer than they actually are. Moreover, the use of cylindrical lenses produces distorted or blurred images in which objects appear broader in proportion to height than they actually are. The use of cylindrical lenses in this way is not new and ophthalmologists who have tried it have not found it any improvement.

More important, it is pointed out by ophthalmologists that the use of cylindrical lenses cannot obviate other inherent defects in telescopic spectacles which affect their usefulness, such as the limitation in the field of vision, the apparent movement of objects on turning the head, the necessity for keeping them in adjustment, the impossibility of using the same lenses for both near and distance vision—not to mention the weight and conspicuous appearance of the device. It therefore appears that the "new development" does not constitute any real improvement which would make the spectacles any more widely applicable for improving the vision of persons with low vision than the types of telescopic spectacles now in use.—A Joint Statement by the American Foundation for the Blind and the National Society for the Prevention of Blindness.

Prevention of Tuberculosis in Childhood.—It is now well known that tuberculosis is usually acquired in childhood either from individuals in the home affected with tuberculosis or from infected milk. We have largely eliminated infected milk by tuberculin testing of cattle and by the efficient pasteurization of milk. As pasteurization of milk becomes more and more prevalent, crippling from tuberculosis of the bones and joints will become less and less common. Every child should be examined periodically by a competent physician in order to detect the earliest signs of tuberculosis. In this way only can the most effective measures for its control be applied. One of the most serious aspects of tuberculosis today is its appearance in young women of high school and college age. The tuberculosis death rate has been reduced considerably at all age periods except among young women. The dieting fad to secure a slender figure and overactivity at school and in social events undoubtedly contribute to this condition.

The prevention of tuberculosis in childhood is relatively simple if a few principles are carried out as follows:

1. Keep the child away from contact with tuberculous individuals, especially in the early years of life.
2. Protect the general milk supply by efficient pasteurization and heat all milk given to young children.
3. Maintain a good nutritional status in the child by proper feeding.
4. Prevent as far as possible overactivity and fatigue in young people.
5. Have the child examined periodically by a competent doctor.—Richard A. Bolt, M. D., Director Cleveland Child Health Association.

STATE MEDICAL ASSOCIATIONS

This department contains official notices, reports of county society proceedings and other information having to do with the state associations and their component county societies. The copy for the department is edited by the state association secretaries, to whom communications for this department should be sent. Rosters of state association officers and committees and of component county societies and affiliated organizations, are printed in the directories noted under Miscellany, on the front cover index.

CALIFORNIA MEDICAL ASSOCIATION

GEORGE G. REINLE ....President
CLARENCE G. TOLAND........................President-Elect
EMMA W. POPE........................Secretary-Treasurer

OFFICIAL NOTICES

Proposed Amendments to the Constitution
(Second Publication)

ARTICLE X

Section 1. Amend Section 1 by inserting therein before the words "an editor" the following: *"the chairman of the Committee on Public Relations."*

ARTICLE X

Section 4. Amend the first sentence of Section 4 by striking out the word "and" and inserting after the word "delegates," the following: *"and the chairman of the Committee on Public Relations."*

ARTICLE X

Section 15. Amend Article X by adding thereto a new section to be numbered 15 and reading as follows: *"Section 15. Election, Term of Office and Powers and Duties of the Chairman of the Committee on Public Relations.*

"The election, term of office and the powers and duties of the chairman of the Committee on Public Relations shall be provided in the by-laws."

* * *

Application for Place on Annual Program.—Members who desire to present papers before the 1934 annual session, which will be held at Riverside, should write to the secretary of the section before which the particular subject should be presented.

Names and addresses of section officers are regularly published on advertising page 4 of each issue of California and Western Medicine.

When requesting place on the program, a brief résumé of the paper should accompany the application.

* * *

Committee on Scientific Exhibits. — To stimulate greater interest in the scientific exhibit at the annual session, a special committee has been appointed by the Council: William J. Kerr, M. D., Lyell C. Kinney, M. D., Frederick Leet Reichert, M. D., Ernest M. Hall, M. D., and Elbridge Best, M. D.

Members of the California Medical Association who are interested in the display of some scientific exhibit at the next annual session should place a request for space through the State Association office. A rather complete description of the exhibit, with approximate size of wall or table space required should accompany the written request.

COMPONENT COUNTY MEDICAL SOCIETIES

CONTRA COSTA COUNTY

The October meeting of the Contra Costa County Medical Society was held on Tuesday evening, October 10, at the nurses' home of the County Hospital at Martinez. Thirty-one members and guests were in attendance. It was gratifying to have many from the upper end of the county.

The meeting was called to order by Dr. L. H. Fraser, president.

In lieu of the clinical program promised, Dr. John Fitzgerald arranged a most intensely interesting duo of papers by Dr. George Nesche of Oakland on *Glandular Disturbances,* and Dr. Warren B. Allen of Oakland on *Head Injuries.* Both papers were enhanced in point of charm and clarity by the splendid slide demonstrations by Dr. Theodore Schwarz of Oakland. Everyone enjoyed the program, and agreed that it was one of the finest this year.

Doctor Fraser expressed his thanks and that of the society to Doctor Fitzgerald for his able arrangement, which gave the members and guests such a pleasant and profitable evening.

A communication from the Department of Public Health from Washington on venereal disease information was read by the secretary, and placed on file for reference.

Two committees were named by Doctor Fraser:

Committee on Physical Therapy—Doctors Nevius (chairman), Hedges, and Daily.

Committee on Cancer—Doctors Weil (chairman), Keser, and Sweetser.

Application for membership in the society was presented from Dr. M. C. Bolender of Danville. Motion that he be accepted was made by Doctor Weil, seconded by Doctor Daily, and carried.

Application for membership by Dr. Claude Kerns of Pittsburg was presented. Motion for his acceptance was made by Doctor Beard, seconded by Doctor Keser, and carried. This brought the total membership to forty-five.

Doctor Fraser appointed the following Nominating Committee: Doctors Weil (chairman), Hedges, and Stauffer.

The committee to arrange the annual party in December was appointed by Doctor Fraser as follows: Doctors Daily (chairman), Fitzgerald, and Clara Spalding.

Doctor Fraser announced that the business meeting of November will be a dinner meeting.

The meeting adjourned at 10 p. m., being followed by a delicious buffet supper.

Clara H. Spalding, *Secretary.*

* * *

ORANGE COUNTY

Cancer was the subject of the October 3 meeting of the Orange County Medical Society, which was held in the chapel of the Orange County Hospital and, as usual, President Wallace was in the chair.

After the minutes of the previous meeting had been read and approved, Dr. C. D. Ball read an obituary on Doctor Bullard.

Before the scientific program the following reports were made:

Doctor Clark reported that the Public Relations Committee would probably be able to report on several matters at the next meeting.

Doctor Zaiser announced the inauguration of a bimonthly clinical and pathologic conference.

On a motion by Doctor Tedstrom, which was unanimously carried, it was agreed to pay the annual $25 bill due the Barlow Medical Library.

The second readings of the applications of Doctors A. H. Wightman and R. C. Harris were heard and both were elected to membership.

The program which followed, and which undoubtedly took a great deal of time and effort to prepare, was not only extremely interesting but educational and inspiring as well.

Instead of trying to describe each event in terms which could not possibly merit the program itself, I shall simply list the numbers in their order of appearance and let you judge for yourself.

History of Cancer Committee by Doctors Burlew and Harwood.

Radiotherapy in Nonmalignant Disease of the Uterus and Ovaries by J. Wehrly, M. D.

Indication for Exploratory Operations for Suspected Malignancy by A. C. Robins, M. D.

Factors Influencing a Favorable Prognosis in Cancer by W. P. Baker, M. D.

Cancer films: (a) *Growth of Human Tumors* (one reel); and (b) *Technical Methods in Cancer Research* (three reels).

The Cancer Committee, which meets every Tuesday noon at Saint Joseph's Hospital, arranged this program. After a rising vote of thanks was given them, the meeting adjourned.

Waldo S. Wehrly, *Secretary.*

PLACER COUNTY

The September meeting of the Placer County Medical Society was held at the Freeman Hotel, Auburn, on Saturday evening, September 30. There were present the following members and visitors:

Members—Dr. L. B. Barnes, president; Doctors Paul Barnes, Dunievitz, Miller, Crossen, Eveleth, Lewis, Atkinson, Peers, Louis Jones, Empey, and Kindopp.

Visitors—Dr. J. Marion Read and Dr. J. J. Sampson of San Francisco, Doctors Vinks of Lincoln, Padgett of Wiemar, Wheeler of Colfax, and W. W. Reed of Nevada City.

Correspondence relating to state and county medical matters was read.

Resolutions regarding the death of our late member, Dr. Bradford Woodbridge, were adopted and ordered spread on the minutes and a copy sent to the family of deceased.

The application of Dr. Watslo A. Vinks of Lincoln for membership was read, and Doctor Vinks was unanimously elected as a member of the Placer County Medical Society.

The president then introduced Dr. J. Marion Read of the Stanford University medical department, who addressed the society on *The Blood Pressure—Certain Uncommon But Valuable Applications.*

Doctor Read showed that a review of the historical development of our power to measure arterial pressure reveals that our approach to this subject gave undue weight to the systolic pressure. In fact, for the first ten years of practical clinical sphygmomanometry, only the systolic pressure was read and it came to be regarded as the whole of the blood pressure. Not until about 1913 did the diastolic pressure come to be read, and it required another decade or more before knowledge of its greater importance came to be realized by the profession at large.

The function of the heart and vessels is to maintain the circulation of blood, and consequently, from the viewpoint of arterial pressures, the most important of all is the pulse pressure. The pulse pressure, in turn, is determined by, or bears a definite relationship to, the diastolic pressure. There seems to be a law of hemodynamics which requires that the pulse pressure be about one-half of the diastolic pressure, or, stated otherwise, we have the recognized 1-2-3 relationship of the three pressures—pulse, diastolic, and systolic. For example, the figures usually given to illustrate the normal being: systolic, 120; diastolic, 80; and pulse pressure, 40.

Of these three—systolic, diastolic, and pulse pressure—the last named is the most important because it is the only part of the myocardial force which moves the blood, *i. e.,* produces a pulse. The diastolic is almost as important because it measures peripheral resistance and determines what the others shall be. Systolic pressure, which unfortunately was the first one measured and consequently the best known, is physiologically only the sum of diastolic and pulse pressures. The adaptability of the circulatory system is so great that the body can compensate for pathologic changes, as it does in aortic insufficiency, and these compensatory changes are often viewed as pathologic in themselves.

Doctor Read's paper was discussed by Doctors Paul Barnes, Sampson, Empey, Lewis, Dunievitz, and J. Marion Read.

Dr. J. J. Sampson of the University of California Medical School was then introduced by the president and addressed the society on *The Practical Value and Limitations of the Electrocardiogram.* He outlined the history of electrocardiography, especially illustrating how the criteria of electrocardiogram diagnoses were established and how certain unusual clinical states were first understood through application of this technical aid. Less than 20 per cent of all cardiac cases present diagnostic problems requiring electrocardiographic aid. These cases fall into groups: (1) arrhythmias; (2) myocardial damage; (3) coronary artery occlusion; (4) preponderance of heart muscle mass on either the right or left side of the standard axis; (5) cases under digitalis therapy; and (6) a miscellaneous group, such as pericardial effusion, adhesive mediastinopericarditis, dextrocardia and other congenital lesions, etc. The form and time relations of the normal and the variations occurring in these six groups of cases are described.

Doctor Sampson also showed that much may happen to a heart, especially the development of valve lesions, without production of an abnormal electrocardiogram and, likewise, that prognosis cannot be determined from the electrocardiogram alone.

In conclusion he presented that this technical procedure is valuable in aiding but not supplanting clinical criteria of diagnosis and prognosis of heart disease cases.

Doctor Sampson's address was discussed by Doctors Lewis, Empey, J. Marion Read, Vinks, and Dunievitz. Following the discussions Doctor Sampson demonstrated his portable electrocardiographic apparatus.

At the conclusion of these addresses the president thanked both essayists for their most interesting and instructive presentations.

Robert A. Peers, *Secretary.*

SAN JOAQUIN COUNTY

The stated meeting of the San Joaquin County Medical Society was held in the Medico-Dental clubrooms, 242 North Sutter Street, Stockton, Thursday, October 5, at 8:15 p. m. The meeting was called to order by President J. F. Doughty.

Several letters were read and ordered filed. In response to a letter from Doctor Kilgore, it was moved by Doctor Van Meter that a committee be appointed to coöperate with the Cancer Commission. This was seconded and carried.

The discussion of fees for mileage for calls in the county was opened by Dr. Dewey R. Powell. A general discussion followed. At the close Doctor Powell moved that a committee of five be appointed to study the subject and report back at the next regular meeting in November.

The scientific part of the program was a paper by Dr. Joseph Catton of San Francisco on the subject, *The Handling of the Neurotic Patient by the General Practitioner.*

Doctor Catton urged the necessity of a thorough history, a searching physical examination and careful consideration of every phase. He said it was important to hear the patient's whole story with real interest and not to dismiss him hurriedly as just another neurotic. Family history is of especial importance. The doctor stressed the importance of having a definite classification in mind to be able to place the particular case after getting the history and physical findings.

Doctor Catton said that it was characteristic of the neurotic that his condition was a functional nervous affection, as contrasted with those conditions having a structural basis; he has a low nervous reserve, with easy nervous irritability and fatigability. These patients tend to gain whether it be money, attention, or treatment. He does not seek to eliminate himself from social circles and other activities. In all these respects he is the opposite of the psychotic patient.

The discussion was opened by Dr. Margaret Smyth and participated quite generally by a large number, including Doctors Marnell, McGurk, Dewey Powell, and C. V. Thompson.

President Doughty appointed Doctor Bolinger, chairman, with Doctors Blinn, Sutton, Kyddson, and Tretheway as a committee to study the matter of mileage fees.

There being no further business the meeting was adjourned and refreshments served.

C. A. Broaddus, *Secretary.*

*

SANTA BARBARA COUNTY

The regular meeting of the Santa Barbara County Medical Society was held on Monday evening, October 9, in the Bissell Auditorium of the Cottage Hospital, President Geyman presiding.

Dr. Carl W. Rand of Los Angeles gave a very comprehensive talk on his own work and findings in regard to histologic changes of the brain, following head injuries. Discussion and questions followed by Doctors Evans, Richard, Wilcox, Shelton, and Koefod.

The society then went into executive session.

Doctor Gray reported for the Board of Censors regarding the formation of a branch society in Santa Maria. After considerable discussion, this report, together with its enclosed resolution, was unanimously adopted. It was moved, seconded and carried, that the secretary notify the Santa Maria group that the society went on record favoring the formation of a branch society.

It was moved by Doctor Ullmann, seconded, and unanimously carried that the president appoint a committee to prepare an amendment to the constitution which would provide for a council of five members, to be elected from the entire county membership, with the exception that one member so elected shall reside north of Gaviota Pass.

A communication from the Santa Maria group of doctors, in which they suggested certain changes in the constitution, was then read. As these changes were covered in the above motion by Doctor Ullmann, this communication was ordered tabled.

William H. Eaton, *Secretary.*

*

SONOMA COUNTY

The Sonoma County Medical Society held its regular monthly meeting at Hotel Petaluma on October 12, Dr. Mark L. Lewis, president, presiding. Twenty-two members and guests were present.

Dr. Chauncy D. Leake, Ph. D., was guest speaker. Dr. H. C. Smith of Glendale and Dr. L. A. Stuck of Oakland were also guests of the evening.

A number of communications relative to the Public Library, the study of cancer by the Cancer Commission, care of patients at the University Hospital, and the Public Relations Committee were read and the following committees were appointed by the president:

Committee on Physiotherapy — B. L. Baldwin of Healdsburg, H. C. Honor of Cotati, and D. C. Oakleaf of Cloverdale.

Committee on Cancer Commission—A. A. Thurlow of Santa Rosa, A. M. Bowles of Santa Rosa, and Chester Marsh of Sebastopol.

Committee on Public Library—D. C. Oakleaf of Cloverdale, B. L. Baldwin of Healdsburg, E. T. Noall of Santa Rosa, Kathleen Morris of Petaluma, E. J. Finnerty of Sonoma, and Chester Marsh of Sebastopol.

Other items of interest were discussed, and arrangements were made for a clinic on tuberculosis for the November meeting.

The president then introduced Doctor Leake, professor of pharmacology, University of California Medical School. Doctor Leake gave a very interesting and instructive discourse upon the subject of *Drugs.* His remarks were highly appreciated by all present, and a lively discussion followed from which much valuable information was derived.

W. C. Shipley, *Secretary.*

*

TULARE COUNTY

The Tulare County Medical Society met at Motley's Café in Visalia on October 22 to open the fall term with a dinner and regular medical meeting.

Since the last gathering our society has suffered the loss of two members through death—Dr. Thomas Omar McSwain of Visalia (retired) and Dr. Morton W. Fraser of Woodlake. Doctor Fraser's death was untimely and a great shock to the society and his colleagues. We are also grieved to report the passing of Bruce Zumwalt, son of Dr. Elmo Zumwalt.

During the summer months communications accumulated, and these were read and summarized for the members present.

The following Special Committee on Physical Therapy was appointed to coöperate with the California State Committee on Physical Therapy: Dr. Edgar Brigham of Dinuba (chairman) and Dr. Frank Guido of Visalia.

A second committee, on education, was appointed to carry out a successful campaign to put suitable medical books on the shelves of our public libraries, the committee to consist of Dr. Newton Miller of Porterville (chairman) and Dr. John Fillmore of Strathmore.

A tentative schedule of proposed meetings for the coming year was read to point out the value of regular attendance.

Dr. Giles S. Porter and Dr. Tellfer of the State Department of Public Health were guests at our meeting. They are at present in Tulare County investigating the question of nonresident indigent aid especially, resultant from the recent cotton-picker strike situation.

Doctor Porter outlined the present plan which, locally, is under direction of Miss A. J. Montegriffo, field deputy of the Emergency Relief Administration. The proposal is to employ local physicians on a fee schedule similar to rates established by industrial commissions. Likewise, three public health nurses are available for bedside nursing. It was reported by Doctor Porter that Corcoran Camp was in good sanitary condition, contrary to various newspaper statements. He also spoke of the work of diphtheria immunization that is at present being carried out in Tulare County with the assistance of the state department, and thanked the men who are donating their services in assisting in this work.

The business of the meeting being concluded, the remainder of the evening was turned over to Dr. Clark M. Johnson, guest speaker from San Francisco.

Doctor Johnson, genito-urinary surgeon, had as his subject, *The Prostate.* His talk dealt with the nonspecific chronic infections of the prostate and seminal vesicles and the obstructive type of prostate. A very practical discussion was given. Lantern slides were used to visualize the subject and, in addition, the McCarthy transurethral resectoscope was demonstrated. Open discussion followed the paper.

Twenty-two members and guests were in attendance.

Karl F. Weiss, *Secretary-Treasurer.*

CHANGES IN MEMBERSHIP

New Members (14)

Contra Costa County.—Samuel Eldridge.
Imperial County.—Merrill G. Barmore.
Orange County.—Rafael C. Harris, A. H. Wightman.
Placer County.—Watslo Anthony Vinks.
San Bernardino County.—William H. Spicer.
San Diego County.—Robert E. Austin.
Santa Clara County.—Finlay P. Rutherford, Clara A. Silvia, Grainville Wood.
Sonoma County.—H. S. Gossage, Herbert Clyde Honor, Vera Ocker Honor.
Ventura County.—Everett C. Beach.

Transferred (5)

Winfred E. Hart, from Siskiyou to San Joaquin County.
Thair C. Rich, from Los Angeles to Ventura County.
Homer De Witt Rose, from Tuolumne to San Joaquin County.
George M. Uhl, from Sacramento to Yolo-Colusa-Glenn County.
George C. Wrigley, from Tuolumne to San Joaquin County.

Resigned (1)

William C. Munly (Associate), from San Francisco County.

In Memoriam

Fraser, Morton William. Died October 4, 1933, age 45. Graduate of Hahnemann Medical College of Pacific, San Francisco, 1914. Licensed in California in 1915. Doctor Fraser was a member of the Tulare County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

✠

Gallup, Howard Augustus. Died October 9, 1933, age 49. Graduate of Cooper Medical College, San Francisco, 1911, and licensed in California the same year. Doctor Gallup was a member of the San Luis Obispo County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

✠

Lynch, Jerre George. Died September 18, 1933, age 55. Graduate of Cooper Medical College, San Francisco, 1906, and licensed in California the same year. Doctor Lynch was a member of the Los Angeles County Medical Association, the California Medical Association, and a Fellow of the American Medical Association.

✠

McSwain, Thomas Omar. Died August 10, 1933, age 71. Graduate of the College of Physicians and Surgeons, San Francisco, 1899, and licensed in California the same year. Doctor McSwain was a retired member of the Tulare County Medical Society, the California Medical Association, and the American Medical Association.

✠

Moots, Charles William. Died October 14, 1933, age 64. Graduate of Medical College of Ohio, 1895. Licensed in California, 1925. Doctor Moots was a member of the San Bernardino County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

✠

Sanford, Paul. Died September 29, 1933, age 74. Graduate of the Kentucky School of Medicine, Louisville, 1891, and licensed in California the same year. Doctor Sanford was a member of the Santa Clara County Medical Society, the California Medical Association, and the American Medical Association.

Wald, Olander E. Died September 16, 1933, age 65. Graduate of the University of Illinois College of Medicine, 1898. Licensed in California in 1924. Doctor Wald was a member of the Los Angeles County Medical Association, the California Medical Association, and a Fellow of the American Medical Association.

OBITUARIES

Shaen S. Magan

1896-1933

Dr. Shaen S. Magan of Covina, California, second son of Dr. Percy T. Magan of the White Memorial Hospital, Los Angeles, was drowned with his little son, Bobby, and a friend, George Steckel, Jr., in Yellowstone Lake, August 31, 1933. Their tragic loss was caused by a sudden and very severe storm which, undoubtedly, swamped the small boat in which they were riding. Both Doctor Magan and Mr. Steckel were excellent swimmers, but the bitter cold of the water, the high altitude, and the weight of heavy clothing, together with their evident earnest attempts to save eight-year-old Bobby, made a handicap impossible to overcome. The bodies of all three were recovered.

Shaen Magan was born in Battle Creek, Michigan, September 24, 1896. Had he lived until September 24 last, he would have been thirty-seven years of age. His premedical work was taken at the University of Tennessee. He completed his medical course in the College of Medical Evangelists in 1921. Following this he immediately went to Covina, where he entered practice with his brother, Dr. W. P. Magan.

Doctor Magan was a member of the Los Angeles County Medical Association, the California State Medical Association, the American Medical Association. He was also a member of the Radiological Society of America.

That he was beloved by the citizens of Covina is testified to by the fact that over three thousand men and women of every walk and rank in life were present at his funeral, which was held at the First Methodist Church, September 9. He leaves a widow and two daughters to mourn his loss.

✠

Charles W. Moots

1869-1933

Dr. Charles W. Moots was a man who merited and held the esteem of his professional colleagues and of his large clientele. He was a forward-looking man, with initiative and ambition, caring far more for artistic success than for financial returns. He was ever willing to help his medical associates, and took particular delight in assisting the younger members of the profession. His was the personal touch, with a large and sympathetic understanding of all the problems of his patients. He gave everything that he had to his professional work, taking little time for recreation. This held true to the time of his final illness, and perhaps contributed to his untimely passing.

Doctor Moots was honored for his original contribution to the science of medicine by the adoption of the "Moots Rule," which is being taught in medical colleges and universities. For this contribution he was recognized by the Royal College of Surgeons of England, who extended an invitation to him to bring his anesthetist with him to London and demonstrate the principle.

During his later years Doctor Moots became more and more conscious of a heart lesion developed in youth, this being perhaps the principal cause of his retirement from active medical and surgical work about four years ago. The last three years of his life, spent as field representative of the American College of Surgeons, he felt were the happiest of his professional career. During this time Mrs. Moots accompanied him on all his travels through the United

States and Canada. He did more than was expected of him in trying to raise the standard of hospital work and, wherever possible, to smooth out local and factional differences.

Doctor Moots loved all that was beautiful in nature and never tired of the view of the mountains surrounding the beautiful little home which he built and the orange grove which he planted in Mentone, California, at the mouth of Mill Creek Canyon. He looked forward with intense pleasure to retirement in this lovely spot, but this wish was not to be gratified.

During the last six months of his life he felt very keenly that he could not long continue his travels, but he hoped that he might finish the work that he had undertaken. The cardiac weakness became more and more embarrassing, and he was hurriedly brought to his home from Hibben, Minnesota, where his last work was done. He seemed then to sense that the end was not far off. He was taken to St. Joseph Hospital, Orange, California, where the Sisters, for whom he had always had a great admiration, provided the best medical care and skill. To the last, he smiled and cheered up his attendants—then went his way.

The funeral services, held in Redlands, California, were in charge of the local American Legion, and his remains were accompanied by his widow to Marion, Ohio, for interment.

C. M. A. DEPARTMENT OF PUBLIC RELATIONS*

Report on Alameda Plan

The following report on the operation and maintenance of out-patient clinics has been issued by the Alameda County Medical Association and sent to its members.

Some important changes have been made in the administration of the out-patient departments. An assistant medical director has been placed in charge of all out-patient relief. A supervising medical social worker has been placed in charge of the social service for the entire county, covering out-relief activities. Also a supervising public health nurse has been assigned to the nursing activities in the clinics as well as the public health nurses operating under county direction. This has permitted the adoption and maintenance of certain standards in all the clinics which were impossible under a plan formerly in operation where each clinic was operated independently. The professional work of each clinic, including the laboratory, x-ray, and pharmacy, is under the direction of a part-time supervising physician. Previous to the time the county took control, the supervising physician spent a large part of his time settling petty problems of the clerical, maintenance, and social service departments. The elimination of this work has made possible the closer supervision of care of patients by the supervising physician. An executive nurse in each clinic has charge of all activities other than those of a purely medical nature.

The medical staffs in the clinics are made up, so far as possible, of members in good standing of the County Medical Association. All applicants for assignment are required to submit a written statement of qualifications and references. This is reviewed by the administration before a formal notice of appointment to the staff is made. When the annual appointments are made for next year, such appointments will be to the Alameda County Institutions staff. The policy now is that all members of the profession given an appointment will be assigned to service in one of the hospitals or clinics at the discretion of the administration. It is hoped that by this means physicians may broaden their acquaintance with and experience in the various departments. It is particularly hoped that this will make possible the rotation through the hospital service of those men who have proved their capability, interest and loyalty in the clinics. Such a system has been used in the medical department for the past several months and seems to be working very satisfactorily. It is hoped that all those who can give some time to this work will do so, since some of the clinic departments are at present decidedly understaffed. In addition to the main branches of practice, special clinics in allergy, diabetes, cardiac, endocrine, lung, and rectal are operated at the Oakland Clinic. Physicians who have special ability or particular interest in any of these would undoubtedly find them valuable.

In spite of the much more rigid requirements for admission to the clinics, and the increased efficiency of the Social Service department, there has been a considerable increase in the number of persons treated. This is not unexpected, since the improvement in economic conditions has not yet appreciably affected the indigent class.

The Oakland Clinic serves as a good index to the out-patient work being done:

NUMBER OF CLINIC VISITS

	1931	1932	1933
July	5484	6752	8069
August	5656	7477	8610
September	5667	7541	7989

Some of the 1933 increase is accounted for by the centralization of clinics at the Oakland branch.

Increasing use is being made of the part-pay list of the County Medical Association for the care of patients found ineligible in the clinics. The following table indicates the number of referred cases made by medical social workers between January 1 and October 1, 1933.

Patients referred to physicians on part-pay list	1387
Patients referred to patients' private physicians not on the part-pay list	49
Total	1436

* * *

Medical Service for Part-Pay Patients

Patients who are unable to pay full charges for medical service and hospitalization, and yet are not classed as indigents at the Sacramento Hospital, will be cared for by private physicians and in private hospitals at a rate to be determined solely by their financial circumstances.

This plan was unanimously approved by the Sacramento Society for Medical Improvement after it was submitted for consideration by the county health and welfare board.

Under this plan, all patients who pass through the Sacramento Hospital's society service department and are found to have sufficient funds to pay something for medical attention will be given a card. They will present the card to a private physician and will pay him a fee in keeping with their financial circumstances.

Representatives of the social service department will make a thorough investigation into each individual's ability to pay and will suggest to the doctor chosen by the patient the fee to be charged.

The private hospitals have indicated willingness to coöperate with the plan, and hospitalization will be afforded patients in minor circumstances at cost.

Written recommendations follow in part:

That the social service set-up for patients of the part-pay group and for patients of moderate means (cared for by members of the Sacramento Society for Medical Improvement) be similar in principle to that for indigent patients (cared for by the county).

Social interpretation of patient's ability to pay.

---

* An open forum for progress notes on the department's activities, and for brief discussions on medical economics. Correspondence and suggestions invited. Address Walter M. Dickie, Room 2039, Four Fifty Sutter Street, San Francisco. This column is conducted by the Director of the Department.

Financial investigation and rating of part-pay patients by the county medical social workers, at the request of members of the Sacramento Society for Medical Improvement.

Furnishing of social findings on clinic patients to physicians and surgeons to whom these patients are transferred.

Part-pay patients will be referred to the offices of private physicians only when their financial status is known. The investigation of these patients must be handled through the social service department of the Sacramento Hospital.

The social worker discusses with the patient the matter of payment, and an understanding of the amount to be paid is arrived at before the case is referred to the private physician chosen by the patient. The patient is also told he will be expected to pay cash.

The social worker who has investigated the patient secures the name of the physician chosen by the patient. All information of social investigation, showing ability to pay, is sent to the physician, with transfer of medical information.

The social worker communicates with the private physician and arranges an appointment for the patient.

* * *

Association Membership

The Department of Public Relations recently made a survey of 2,609 licentiates located in the state of California, excluding San Francisco, Los Angeles, and Alameda counties. The results show that 68 per cent are members of component county medical societies; that 13 per cent are probably eligible for membership; 6 per cent, whereabouts unknown; 6 per cent who have retired; 3 per cent have moved away; and 4 per cent have at some time been rejected for membership.

The licentiates in San Francisco are 1,540, of which 817, or 53½ per cent, are members of the San Francisco County Medical Society, while Los Angeles has 3,952 licentiates with a membership of 1,889, or 48 per cent. Alameda County has 739 licentiates, and has a membership of 441, or 60 per cent.

The percentage of the licentiates of the state as a whole, show that 55 per cent belong to the California Medical Association.

THE WOMAN'S AUXILIARY TO THE CALIFORNIA MEDICAL ASSOCIATION*

Meeting of the State Board

The state board meeting of the Woman's Auxiliary to the California Medical Association was held on Friday, October 7, at the Fairmont Hotel, San Francisco. The executive board met at 9:30, following which was the regular board meeting. Mrs. A. M. Henderson, state president, presided at both of these meetings. The reports presented by the chairmen present made the fact clear that each one was taking her office seriously and putting her best efforts into her part of the work. This was especially true of the auxiliary president, Mrs. Henderson. Her report made us all feel that the work of the state president can easily keep one woman busy all the time. The day was kept interesting with many discussions, agreements and disagreements. The meeting adjourned at 5:30 o'clock, with a vote to hold the next meeting in Los Angeles in February, 1934.

Component County Auxiliaries

Alameda County.—The Woman's Auxiliary to the Alameda County Medical Society held its regular meeting on Friday, September 15. Mrs. Charles E. Dukes, president, held her regular executive board meeting in the morning at the Women's Athletic Club. As one hundred members came in to luncheon, a reception was held in the lounge to greet the new members and to see that the others were acquainted. Mrs. Austin N. Cary assisted Mrs. Dukes in receiving. A splendid program followed the community singing, which our state president, Mrs. Henderson, urges us to have at all of our meetings, to encourage good fellowship.

The speaker of the afternoon was Miss Marguerite Spiers, supervising medical social worker of Alameda County. She told of the interesting work by the Alameda County Institutions Commission for the needy patients in our county.

Highland and Fairmont hospitals do such wonderful work for the poor through their various clinics: Alameda Clinic, Berkeley Clinic, Hayward Clinic, Livermore Health Center, Oakland Health Clinic, Pleasanton Health Center, San Leandro Clinic, and Washington Township Health Center.

County physicians serve indigent patients in their homes when calls are placed with the physician by recognized welfare agencies and clinics operated in the health centers. The county medical society has furnished the medical director lists of private physicians who have agreed to make home calls and charge the patient according to his ability to pay. A careful system of records eliminates readily those who are ineligible to such part-pay care.

The next event of interest for our auxiliary will be the husbands' dinner in October.

Mrs. Louis Henry Dyke.

* * *

Contra Costa County.—The Woman's Auxiliary to the Contra Costa County Medical Society held its first meeting after vacation Tuesday, September 12, at the home of the secretary, Mrs. W. S. Lucas, with President Mrs. U. S. Abbott presiding.

The regular business was conducted, and a very interesting letter from the state president, Mrs. A. M. Henderson, regarding the national convention at Milwaukee, was read.

Following the business meeting, vocal solos by Mrs. Stauffer of Pittsburg were rendered, and an excellent paper on *Does a Man Who Is Sick Need a Doctor* by Mrs. S. N. Weil of Rodeo. Refreshments were then served by the hostess, with the doctors joining later.

(Mrs. C. R.) Lillian M. Blake,
Publicity Chairman.

* * *

Mendocino County.—On August 16 the second meeting of the Mendocino County Auxiliary was held at Navarra Fairhills Ranch, Philo, when the members were luncheon guests of Mrs. Robert E. Gleason. Mrs. Gleason is a daughter of Mrs. Thomas J. Clark of Oakland, second vice-president of the State Auxiliary, and a niece of Mrs. Lewis H. Dyke, also of Oakland, and past district councilor for the seventh district. It was the good fortune of the Mendocino County unit to have present both Mrs. Clark and Mrs. Dyke, who gave practical talks on *What a County Auxiliary May Accomplish,* and advice gathered from their experience as to ways in which a new organization may be interesting to its members and useful to the medical profession.

Luncheon served on the veranda gave an enchanting view of mountains and redwoods, which lingers in the memory of those present. The business meeting was held on the lawn. Mrs. Gleason was unanimously elected vice-president, the other officers previously elected being Mrs. Ruggles A. Cushman, president, and Mrs. Rudolph Toller, secretary-treasurer. It was voted to invite wives and eligible relatives of Lake County physicians to join this auxiliary. A Committee on Constitution and By-Laws was appointed, consisting of Mrs. Robert Gleason, Mrs. Paul J. Bowman, and Mrs. Raymond Babcock, to report at the next meeting. It was voted that at least four meetings of the auxiliary be held each year, the time and place being left open, subject to favorable conditions.

---

* As county auxiliaries to the Woman's Auxiliary to the California Medical Association are formed, the names of their officers should be forwarded to Mrs. Thomas J. Clark, chairman of the Publicity and Publications Committee, 40 Ross Circle, Oakland. Brief reports of county auxiliary meetings will be welcomed by Mrs. Clark and must be sent to her before publication takes place in this column. For lists of state and county officers, see advertising page 6. The Council of the California Medical Association has instructed the editor to allocate one page in every issue for Woman's Auxiliary notes.

* * *

On August 27 the third meeting of the auxiliary was held in conjunction with the meeting of the county medical society in Fort Bragg, with dinner served at the Hotel Windsor at 1:30 p. m., after which the women adjourned to the home of Mrs. Royal Scudder. Mrs. Paul J. Bowman and Mrs. H. H. Wolfe acted with Mrs. Scudder on the Program and Entertainment Committee.

Mrs. Gleason, chairman of the Committee on Constitution and By-Laws, submitted a report, which was unanimously adopted, after which the election of officers and business of the previous meetings were ratified.

Mrs. Fred H. Kruse of San Francisco, whose husband was speaker of the day for the medical society, was an honored guest of the auxiliary.

The program and entertainment for the day consisted in a tour of the gardens, Mrs. Bowman, Mrs. Wolfe, and Mrs. Scudder, the wives of resident physicians, seeming to be engaged in friendly rivalry in producing rare plants and flowers of unusually bright color. Climate and soil seem impartially in favor of all three, and the results are a study in varieties and effects. A late luncheon was then served at the home of Mrs. Scudder, assisted by Miss Scudder.

The auxiliary is happy to announce it now has fifteen members, and believes it is unique in having more members than has its county medical society (omitting the society's members from Lake County). This is explained by the fact that, in addition to the wives of all members, the auxiliary has the daughter and the widow of a physician.

Mrs. Ruggles A. Cushman, *President.*

* * *

Sacramento County.—The September meeting of the Sacramento County Auxiliary was held at the home of Mrs. A. K. Dunlap, with a large attendance of members.

A short business meeting was held. The outstanding accomplishment was the approval of a library at the County Hospital. Dr. Leo Farrell, the superintendent, has agreed that the plan be adopted and that books will be kept in each of the thirteen wards instead of housing them in one central place. A number of books have already been donated for this purpose to our president, Mrs. Scatena.

Mrs. A. M. Henderson, our new state president, gave a most interesting report of her trip to the national convention in Milwaukee, which was thoroughly enjoyed by all and made each listener feel the sincerity of the ideals of the auxiliaries' effort.

The hostess, Mrs. Dunlap, was assisted by Mesdames E. O. Brown, T. Binkley, Frank McDonald, F. Krull, and Leo Farrell.

* * *

San Diego County.—The San Diego County Auxiliary held its first meeting of the fall in September. The meeting was very well attended. The program was given by Dr. W. W. Roblee, councilor for the ninth district, California Medical Association. His subject was, *What a Doctor's Wife Should Know About Her Husband's Profession.* He gave many suggestions as to how a wife could aid in her husband's work. The women present went home inspired to be of more assistance to their husbands.

NEVADA STATE MEDICAL ASSOCIATION

D. A. SMITH, Mina	President
E. E. HAMER, Carson City	President-Elect
J. N. VAN METER, Las Vegas	First Vice-President
W. H. FROLICH, East Ely	Second Vice-President
HORACE J. BROWN, Reno	Secretary-Treasurer

THIRTIETH ANNUAL SESSION OF THE NEVADA STATE MEDICAL ASSOCIATION

First Day's Meetings—September 29, 1933

The thirtieth annual meeting of the Nevada State Medical Association was held in Las Vegas, and was called to order in the Sal Sagev Hotel at 9:45 a. m. by the president, O. Hovenden of McGill. In his address of welcome the president expressed his appreciation of the goodly number present, and wished for all a pleasant and profitable session.

SCIENTIFIC PROGRAM

The scientific program was then taken up, and was as follows:

W. A. Shaw, Reno, read a paper on *Unusual Embryonal Developmental Error.* Discussed by R. W. Martin, Francis J. Morley, and Horace J. Brown. Discussion was closed by W. A. Shaw.

James F. Percy, Los Angeles, read a paper on *The Proper Technique in Employing the Actual Cautery.* Discussed by E. F. Root. Doctor Percy closed the discussion.

George Warren Pierce, San Francisco, read a paper on *The Practical Application of Reconstruction Surgery.*

C. G. Toland, Los Angeles, read a paper on *A Résumé of Goiter.* Discussed by Miley B. Wesson. Discussion was closed by Doctor Toland.

This completed the scientific session for the day and, after serving of refreshments, lunch was served for the physicians and their ladies at the Apache Café.

BUSINESS SESSION

The business meeting was called to order by President Hovenden at 8:20 p. m. On motion of D. A. Turner, seconded by A. C. Olmsted, the reading of the minutes of the last meeting was dispensed with.

The Delegate to the American Medical Association reported that he was unable to attend the annual meeting of that association and, as no one from Nevada was in attendance, no report could be made.

The Necrology Committee reported the following deaths since the last meeting:

P. De M. McLeod, Tonopah. Died January 8, 1933. Born 1869. Graduate of Harvard University Medical School, Massachusetts.

Arthur L. Grover, Reno. Died January 28, 1933. Born 1876. Graduate of Harvard University Medical School, Massachusetts, 1903.

John Tees, Reno. Died February 3, 1933. Born 1871. Graduate of McGill University, Quebec, Canada.

Wales A. Haas, Boulder City. Died March 6, 1933. Graduate of University of California Medical School, 1926.

* * *

The following In Memoriam was read and ordered incorporated in the minutes:

Today we formally and reverently mourn our dead. In the midst of useful lives, seasoned by high intelligence, and experience, that grim reaper, whose name is Death, sought them for his own. Thus it has ever been. The young and the old, the rich and the poor, the good and the bad, the prince and the pauper—all alike have obeyed the inevitable summons. Such is the Divine decree. Birth and death are creation's law, one generation born with the urge of life only to be succeeded by another generation with the same impelling urge. The milestones of life are naught else but the generations of men that once lived and carried forward the march of progress.

As we look down the dim vista of the past, we can see the successive epochs of progress which our forbears have achieved for us. And in generations to come our posterity possibly will sing our paeans of praise and recount what you and I have done in our day and generation to make the world better and happier for those who follow us.

After all, life is but a workshop and when the work is assumed with pleasure, it is as the poet wrote:

"Let me live in my house by the side of the road
Where the race of men go by—
They are good, they are bad, they are weak, they are strong,
Wise, foolish,—so am I.
Then why should I sit in the scorner's seat
Or hurl the cynic's ban?—
Let me live in my house by the side of the road
And be a friend to man."

As we near the approach to the sunset gate, we realize that life is a divine gift—a gift with a purpose. The purpose is, we do our part. After this is done there is sweet contemplation that today we have done our best, and it shall be as the gifted Tennyson wrote:

"Sunset and evening star,
And one clear call for me!
And may there be no moaning of the bar
When I put out to sea.
But such a tide as moving seems to sleep,.
Too full for sound and foam.
When that which drew from out the boundless deep
Turns again home.
Twilight and evening bell,
And after that the dark!
And may there be no sadness of farewell,
When I embark;
For tho' from out the bourne of time and place
The flood may bear me far,
I hope to see my Pilot face to face
When I have cross'd the bar."

The *Membership Committee* proposed the names of the following registered physicians: Robert Fenlon, Searchlight; M. L. Herzig, Las Vegas; Don G. Lynwalter, Schurz; F. W. Samuels, Reno; Richard Schofield, Boulder City; Robert A. Peers, Colfax, Calif.

On motion of M. A. Robison, seconded by J. N. Van Meter, these physicians were unanimously elected to membership.

Honorary Members.—Moved by W. A. Shaw, seconded by Fleet H. Harrison, that C. G. Toland, William H. Daniel, John C. Wilson, and Burnett W. Wright be made honorary members. Motion carried unanimously.

Federal Emergency Relief Administration.—The secretary called attention to the rules and regulations of No. 7 of the Federal Emergency Relief Administration, which provides for medical care in the home to those receiving unemployment relief.

Northwest Medical Association.—Dr. E. F. Root of Salt Lake City, Utah, presented an invitation from the Pacific Northwest Medical Association to the members of this Association to participate in the annual meetings. He stated that the fee is $5 per day or $15 for the entire meeting for those who attend the meeting, and that there is no fee for those not in attendance. Moved by M. A. Robison, seconded by M. L. Herzig, that the invitation be accepted, and that the secretary notify all of our members. Motion carried.

Doctor Root then informed the members that Nevada is entitled to three members on the Board of Directors, and requested that one be elected for three years, one for two years, and one for one year. The following were elected to serve: Horace J. Brown, for three years; Richard Ostler Schofield, for two years; and C. E. Secor, for one year.

Election of Officers.—The following officers were elected for the ensuing year: President-elect, E. E. Hamer of Carson; first vice-president, J. N. Van Meter of Las Vegas; second vice-president, W. H. Frolich of East Ely; secretary-treasurer, Horace J. Brown of Reno. Trustee for three years, D. A. Turner of Reno. Delegate to the American Medical Association, Horace J. Brown of Reno. Alternate delegate to the American Medical Association, Fleet H. Harrison of Minden.

Place of Next Meeting.—D. A. Turner moved, seconded by W. A. Shaw, that the next annual meeting be held at Bowers Mansion, Reno. Motion carried.

Vote of Thanks to Clark County Medical Society.—M. A. Robison moved that a vote of thanks be extended to the Clark County Medical Society for the very excellent manner in which they had arranged for the meeting and the wonderful entertainment provided; and that the secretary write a letter to that effect to the Clark Couny Medical Society. Seconded by D. A. Turner. Motion carried.

R. W. Martin, president of the Clark County Medical Society, expressed the appreciation of that society and extended a cordial invitation to the Association to return to Las Vegas for another meeting at any time we might see fit.

The meeting adjourned until 9:25 a. m., for the following day.

Second Day's Meeting

The meeting was called to order on September 30 at 9:25 a. m. by President O. Hovenden, and the scientific program was continued.

William H. Daniel of Los Angeles read a paper on *The Operability and Treatment of Rectal Cancer.* Discussed by James F. Percy. Discussion was closed by William H. Daniel.

John C. Wilson of Los Angeles read a paper on *Fractures About the Elbow Joint.* Discussed by R. R. Craig and R. O. Schofield. Discussion was closed by John C. Wilson.

Burnett W. Wright of Los Angeles read a paper on *Stone in the Kidney.* Discussed by Miley B. Wesson and R. O. Schofield. Discussion closed by Burnett W. Wright.

Eugene S. Kilgore of San Francisco read a paper on *Some Newer Concepts of Coronary Disease.* Discussed by J. N. Van Meter. Discussion was closed by Eugene S. Kilgore.

* * *

This closed the scientific session, and at this time the president introduced D. A. Smith of Mina, the incoming president, who responded with a few well-chosen remarks.

There being no further business to come before the Association the meeting was adjourned *sine die.*

* * *

Nevada Members in Attendance.—The following members were in attendance at various times during the meeting: Horace J. Brown, R. Balcom, R. R. Craig, W. H. Frolich, M. L. Herzig, D. J. Hurley, Fleet H. Harrison, O. Hovenden, Don G. Lynwalter, R. W. Martin, Francis J. Morley, Forest R. Mildren, V. A. Muller, A. C. Olmsted, M. A. Robison, W. A. Shaw, D. A. Smith, R. O. Schofield, C. E. Secor, D. A. Turner, J. N. Van Meter.

Honorary Members and Visitors in Attendance.—The following honorary members and visitors were also present at various times during the meeting: William D. Donoher, William H. Daniel, William T. Burton, R. R. Hampton, Frank J. Janssen, J. M. Kehoe, S. G. Kahn, Hale B. Slavin, J. N. McDaniel, E. S. Kilgore, E. D. Lecompte, D. K. Pischel, James F. Percy, George Warren Pierce, E. F. Root, C. G. Toland, Miley B. Wesson, R. Woolsey, B. Wright, C. W. Woodbury, John C. Wilson, and Mr. J. W. Reeve.

Horace J. Brown, *Secretary-Treasurer.*

COMPONENT COUNTY MEDICAL SOCIETIES

WASHOE COUNTY

Washoe County Medical Society held its regular monthly meeting on October 10 in the State Building, Dr. A. R. DaCosta, president, in the chair. The application of Dr. Rodney Elbridge Wyman, which had been read and referred to the Board of Censors at the last meeting, was reported upon and Doctor Wyman was unanimously received into the society.

Doctor Walker, Reno public school health officer, gave a short talk on the necessity of an organized medical effort for examinations of children in the public schools of Reno. Doctor DaCosta appointed Doctors Maclean, Muller, and Walker to confer and report at the next meeting.

Doctor Brown, secretary of the Nevada State Medical Association, was called upon and he gave a résumé of the annual meeting of the state society which was recently held in Las Vegas. Doctor Brown said that, in his opinion, this meeting was equal to the very best meeting ever conducted under the state medical society. The splendid reception given the physicians and their wives was cordial in the extreme. The visit to the Boulder Dam, the greatest engineering project in the world, was commented upon, the dam being greater than any of the seven wonders of antiquity. Doctor Brown said the next meeting of the Nevada State Medical Association would be held at Bowers Mansion, and that a concerted effort on the part of the local profession would be made to make the next meeting the best in the point of social effort and scientific entertainment ever held within the history of the society.

Doctor Hund made a report on the nurses' directory, but owing to the limitation of time, he asked that he be assisted by Doctors Walker and Bart Hood to complete the report.

The secretary then read a notice which he will offer again at the next meeting of the society for adoption or rejection. It consisted of four parts: first, placing the treasurer under bonds and providing for auditing the books by a committee each year; second, making the annual dues $10; third, appointing county delegates to attend the state medical society; and, fourth, changing the by-laws, eliminating a ten-day previous notice by making two readings in succession of proposed change at regular society meetings, and a majority vote for amendment instead of a two-thirds vote.

The essayist of the evening was Dr. Lawrence Parsons, pathologist at Saint Mary's Hospital. He spoke on *The Leukocyte Count in Infections.* A brief historical summary was given leading up to the present classification of the leukocytes into granulocytes, monocytes and lymphocytes, the names of Hewson, Virchow, Cohnheim, and Ehrlich being mentioned in this connection. Physiological leukocytosis was briefly discussed, and it was brought out that the so-called digestive leukocytosis is probably due to other factors, mention being made of the work of Garrey at Vanderbilt University. Pathological leukocytosis was divided into noninfective and infective forms. Particular emphasis was laid upon the importance of the variations in the morphology of the neutrophil nucleus in infection, toxemia, and cachexia. The work of Arneth, Schilling, Cooke, and Ponder, and more recently the simplified filament-nonfilament count of Farley and St. Clair, was discussed. A chart representing the development of the neutrophil was used to illustrate the subject. A brief discussion of the clinical importance of neutropenia was given, and the paper concluded by presentation of illustrative case histories showing the value of the Schilling and filament-nonfilament counts in surgical conditions.

THOMAS W. BATH, *Secretary-Treasurer.*

A Morbidity Registration Area.—The United States Public Health Service has been making preparations for the establishment of a morbidity reporting area. During the past two years they have employed several methods for determining the completeness of reporting in the several states. The requirements for admission to the morbidity-reporting area adopted by the Public Health Service and approved by the Conference of State and Territorial Health Officers June, 1931, were as follows:

1. The state must be included in the registration area for births and deaths.
2. There must be adequate legislation to enforce reporting.
3. There must be machinery for securing reports and keeping records.
4. There must be a clerical force to do the work required.
5. There must be willingness to coöperate in efforts to secure more nearly accurate and complete reports of the notifiable diseases.
6. The state must secure reports of at least as many cases per death as the average number reported by states in the registration area for deaths for the preceding three years for five diseases—diphtheria, measles, scarlet fever, typhoid fever, and whooping-cough. For the year 1930, twenty-four states were rated as standard, and for 1931 there were twenty-six. California has rated standard both years; her rating for 1930 (based on 1927, 1928, 1929 data) was 151 per cent with 100 as the passing mark.

The Founding of the University of Würzburg.—During the middle of May, special ceremonies were begun at Würzburg in commemoration of the founding of the university in 1582 by the bishop-prince Julius Echter v. Mespelbrunn. One cannot think of the university without recalling the Julius Hospital, which the bishop-prince established a few years before the university was founded, although the original hospital structure has not been preserved. This hospital, with its beautiful old garden, its old pharmacy typifying an early rococo style of achitecture, and its wine cellar of international fame, seems to breathe the spirit of the chief city of Lower Franconia; the fantastic baroque mingled with the more somber aspects of medicine.

The university owes its fame chiefly to the faculty of medicine, along with the department of the natural sciences. From this city, in which Albertus Magnus and Paracelsus spent some time, sprang some of the greatest names in the medicine and surgery of this period: the archeologist Athanasius Kircher, who searched for the causative agent of the plague; the families that produced so many eminent anatomists and surgeons: v. Siebold, Döllinger, Virchow, which latter established the Julius Hospital, the first pathologic institute in Germany; E. v. Bergmann, Franz Hofmeister, Leube, and the great professor of otology Anton v. Tröltsch. Other famous names are Haeckel, the zoölogist v. Leydig, the botanist Julius Sachs, the chemist Emil Fischer and Roentgen. Many others have achieved fame in the field of natural sciences. . . . *Journal of American Medical Association,* Vol. 99, No. 3.

Red Cross Nursing Service.—No part of the United States is left uncovered by the Red Cross Nursing Service, which is the reserve, in times of war, of the Army and Navy. In its enrollment are 3,000 active graduate nurses, the flower of their profession, of which 1,400 serve as volunteers on the 200 local committees charged with the duty of recruiting nurses for the American Red Cross. In every disaster the Red Cross nurse is among the first to arrive upon the scene. Her very presence calms and steadies the terrified victims. Her skilled hands minister to their injuries. Throughout the period of disaster relief in Long Beach, following the earthquake of March 10, 1933, 689 Red Cross nurses served as full-time volunteers in this fashion.

During the past year 1,611 Red Cross nurses were authorized to teach the course known as Home Hygiene and Care of the Sick, a total of 58,500 individuals benefiting by this valuable instruction.

MISCELLANY

Under this department are ordinarily grouped: News; Medical Economics; Correspondence; Twenty-five Years Ago column; Department of Public Health; California Board of Medical Examiners; and other columns as occasion may warrant. Items for the News column must be furnished by the fifteenth of the preceding month. For Book Reviews, see index on the front cover, under Miscellany.

NEWS

Coming Meetings.

American Medical Association, Cleveland, Ohio, June 11 to 15, 1934. Olin West, M. D., Secretary, 535 North Dearborn Street, Chicago, Illinois.

California Medical Association, Riverside, April 30 to May 2, 1934. Emma W. Pope, M. D., Secretary, 2004 Four Fifty Sutter, San Francisco.

Medical Broadcasts.*

American Medical Association Health Talks.—The American Medical Association broadcasts on Tuesdays and Thursdays from 9:15 to 9:20 a. m., over Station WBBM (770 kilocycles, or 389.4 meters).

There is also a fifteen-minute talk, sponsored by the Association, on Saturday mornings from 9:45 to 10 o'clock over Station WBBM.

* * *

San Francisco County Medical Society.—The San Francisco County Medical Society broadcasts every Tuesday from Station KFRC, 4 to 4:15 p. m., and over Station KJBS from 11:15 to 11:30 a. m.

Los Angeles County Medical Association.—The radio broadcast program for the Los Angeles County Medical Association for the month of November is as follows:

Tuesday, November 7—KFI, 10:15 to 10:30 a. m., and KECA, 9:30 to 9:45 a. m. Subject, Regular Health Examinations for Children.

Tuesday, November 14—KFI, 10:15 to 10:30 a. m., and KECA, 9:30 to 9:45 a. m. Subject, Good and Bad Posture in Children.

Tuesday, November 21—KFI, 10:15 to 10:30 a. m., and KECA, 9:30 to 9:45 a. m. Subject, Childhood Tuberculosis.

Tuesday, November 28—KFI, 10:15 to 10:30 a. m., and KECA, 9:30 to 9:45 a. m. Subject, Why X-Ray and Laboratory Tests?

Symposium on Heart Disease.—The Heart Committee of the San Francisco County Medical Society will hold a two-day postgraduate teaching course on heart disease, and has scheduled the meetings as follows:

San Francisco Hospital—Wednesday morning, November 22.

Stanford University Hospital—Wednesday afternoon, November 22.

University of California Hospital—Thursday morning, November 23.

San Francisco Department of Public Health—Thursday afternoon, November 23.

San Francisco County Medical Society—Thursday evening, November 23.

Preliminary arrangements include a symposium on arterial hypertension at the San Francisco Hospital, conducted by members of the visiting staff. The meeting at the Department of Public Health will be devoted to a discussion of the public health aspects of heart disease, especially cardiac morbidity, and problems relating to the cardiac school child. The evening meeting on Thursday will be in the nature of a clinical pathological conference on heart disease, and a discussion on surgery of the heart.

There is no fee in connection with the symposium, and all doctors who are interested are welcome to attend. All who desire programs should notify the secretary, Dr. J. Marion Read, 490 Post Street, San Francisco.

International Union Against Tuberculosis.—The annual meeting of the council of the International Union Against Tuberculosis, whose chairman is Professor Nolen (Netherlands), was held in Paris on Saturday, July 22. Delegates from fourteen countries attended this meeting. At 10 a. m. administrative session took place at the Headquarters of the Union, 66 Boulevard St-Michel, Paris. It was decided that the conference of the International Union would be held in Warsaw on September 4, 5, and 6, 1934, and that the three following subjects, selected from a list of questions submitted by the various countries belonging to the Union, would be entered on the agenda:

Biologic subject: Biological variations of the tubercle virus. Opening report by Professor Karwacki of Poland.

Clinical subject: The various forms of osteo-articular tuberculosis and their treatment. Opening report by Professor Putti of Italy.

Social subject: The utilization of dispensaries for the treatment of tuberculous patients. Opening report by Prof. Leon Bernard of France.

Mr. John A. Kingsbury of the United States will give a lecture on methods in further control of tuberculosis; report upon an experiment in a rural area characterized by a low tuberculosis rate. According to the plan followed at Oslo and at The Hague, ten speakers, selected from different countries, will be designated to open the discussion on each of the three main subjects.

The National Tuberculosis Association, 450 Seventh Avenue, New York, is arranging for a special party to the Warsaw meeting, and those desiring to travel with this group to the meeting may secure further information from the Association.

University of California Physician Is Speaker Before Southern Groups.—Dr. William J. Kerr, professor of medicine in the University of California Medical School, San Francisco, has returned from a week's trip to Southern California, where he addressed several groups on medical subjects. This was done, according to Dean Langley Porter, as a part of the University's program to present recent work of the Medical School to the physicians and surgeons of the state.

He was the guest speaker before the San Diego Academy of Medicine, his topic being "Diseases of the Liver, with Special Reference to the Value of Functional Tests." Before this same body he also spoke on "Clinical Observations on Deficiency Diseases."

In Los Angeles he addressed the Premedical Association of the University of California at Los Angeles, and gave the opening address of the school year to the students of the University of Southern California Medical School on Medical Education. Before the College of Medical Evangelists, at the White Memorial Hospital, he talked on "Heart Murmurs."

---

* County societies giving medical broadcasts are requested to send information as soon as arranged (giving station, day, date and hour, and subject) to California and Western Medicine, 450 Sutter Street, San Francisco, for inclusion in this column.

His last address of the trip was before the Los Angeles County Medical Association, where, as guest speaker, he gave a paper on "Clinical Application of Methods for Testing the Functional Capacity of the Liver."

Cancer Commission Meeting.—The Cancer Commission, at its meeting in Santa Barbara, approved the holding of a mid-winter pathological and x-ray conference at Highland Hospital in Oakland, Saturday, December 16, at 8 a. m.

New Specialist on Whooping Cough to Do Research at University of California.—The staff of the department of bacteriology on the Berkeley campus of the University of California has been augmented by the addition of a new research worker who will collaborate with Associate Professor A. P. Krueger in studies of whooping cough.

The new arrival is Dr. John Miller, graduate of Stanford Medical School and former resident physician in pediatrics at the University of California Hospital. For the past year Doctor Miller has been conducting research at the Staats Seruminstitut in Copenhagen on the subject of whooping cough. He was sent there as a National Research Council Fellow, and has come to the University of California in a like capacity.

Among the reasons for selecting the Berkeley campus to carry on his studies, Doctor Miller lists the fact that much work has already been done there in his special field. A few months ago Professor Krueger succeeded in developing a vaccine known as Krueger's Pertussis Endoanyicen, which has given better results in the treatment of whooping cough than any other vaccine yet tried. The first test series of cases demonstrated that this new vaccine yielded good or excellent results almost twice as often as did the old type of vaccine. Of equal importance was the fact that this Krueger vaccine is apparently free from local or constitutional effects except on whooping cough.

University of California Alumni Day.—The semiannual alumni day of the University of California Medical School will be held on Friday, November 24, at the University of California Hospital, Parnassus and Third avenues, San Francisco.

The morning session is as follows:

8:30-11:30—Operative Clinics.
  General Surgery and Neurosurgery—Dr. Howard C. Naffziger and staff.
  Gynecology—Drs. Frank W. Lynch and Alice F. Maxwell.
  Urology—Drs. Frank Hinman, Sidney Olsen, and Clark M. Johnson.
  Otorhinolaryngology—Dr. Wallace B. Smith.
  Ophthalmology—Dr. Joseph L. McCool.
  Orthopedic Surgery—Dr. LeRoy C. Abbott and staff.
10-12—Pediatric Ward Rounds. H Ward.
  Dr. Francis S. Smyth and staff.
9-11:30—Medical Staff Conference. Toland Hall, University Hospital.
  Demonstration of Various Endocrine Conditions—Dr. Hans Lisser.
  Discussion by Drs. Wallace I. Terry, Howard C. Naffziger, Charles L. Connor, and William J. Kerr.
11:30-12—Visiting Tour of University Hospital, New Out-Patient Department and Hooper Foundation. The staff and senior students will guide alumni and visitors about the San Francisco campus.
12-1:30—Buffet Lunch. Faculty Club, University Hospital.

Program of the afternoon session, in Toland Hall, University Hospital, Dean Langley Porter, presiding.

2-4—Discussions and Demonstrations.
  Studies on the Etiology of Rheumatic Fever—Drs. James F. Rhinehart and Stacy R. Mettier.
  Etiology of the Common Cold—Dr. William J. Kerr.
  Interesting Studies on Allergy—Dr. William C. Deamer.
  The Development of Ideal Anesthesia—Dr. Chauncey D. Leake.
  What a Medical Center Can Mean to the Man in Practice—Dr. J. Homer Woolsey.
4—Annual Alpha Omega Alpha Lecture.
  Topic and speaker to be announced later.

CORRESPONDENCE

Subject of following letter: Request by State Medical Library for coöperation in carrying on its work.

When Is Your Journal Due?

To Whom It May Concern:

Will all those who are dilatory in the matter of returning borrowed material to the State Medical Library please read what is to follow? This is not intended for the majority, for they are prompt and considerate both in returning material and in paying postage remittances. This is, rather, for those few borrowers who have failed in any or all of the following requirements:

1. To return borrowed material when due.
2. To notify the library before the due date if it is impossible to return the material then, with reasons for such delay.
3. To pay the postage due when material is returned if a deposit has not already been paid.

This is an urgent plea. The State Medical Library can give prompt service when promptness is, in turn, given it. If you keep us waiting, we of necessity are compelled to keep others waiting. Some time this may be you. And, incidentally, you do not receive the material so regularly nor in such quantities as you might wish, because of that very reason.

And the State Medical Library is *not* responsible for postage, and by law is forbidden to expend public moneys therefor.

We thank you! We shall be grateful if you who may be dilatory will turn over many new leaves. With your coöperation our service to you and to others will increase, we trust, a hundredfold.

Remember, the date due is told you for a reason. You will find it on the card sent out with the journal, and, in cases of necessity, on the journal itself.

737 North Broadway, Los Angeles.

Gratefully and sincerely,
State Medical Library,
By Marjorie Utt.

Subject of this letter: Insurance fakir.

To the Editor:—A man giving the name of L. H. Freeman, but alleged to be the same party going under the name of Dr. Osmond in serving a sentence in San Quentin, has been calling on doctors in this vicinity and representing himself as an agent of the Colonial Mutual Life Association, with instructions to appoint medical examiners.

Freeman endeavors to induce the doctor to sign an application for insurance on his own life, for which he collects from $10 to $30, assuring them this is sufficient to cover from one to three years' premium and in consideration of which he is reported to make the appointment of the applicant as a medical examiner for this company.

It is suggested that any doctor on whom Freeman might call make an appointment with him for some subsequent time, getting in touch with our office at

Mutual 2079, Los Angeles, in order that we may take the necessary steps to be in the doctor's office and receive Mr. Freeman when he undertakes to fill the appointment.

Any service you may render us in this respect will be highly appreciated.

(Signed) Colonial Mutual Life Association.
By M. T. Emanuel,
Assistant Secretary.
337 South Hill Street, Los Angeles.

Subject of following letter: Fraudulent saleswoman of gowns.

To the Editor:—I have for some time felt that I should ask you to make announcement, through your proper columns, regarding what seems to be fraudulent sale of doctors' and nurses' gowns. About September 1 a woman, well dressed, with a pleasant line of sales argument, came to the Medico-Dental Building of San Jose and took orders for nurses' and doctors' gowns. The price was very attractive, being less than half the usual price of such wearing apparel. For cash she reduced the price 10 per cent, making the cost of an excellent doctor's gown $1.35. She also stated that if we put in a larger order prior to September 15, we would still be receiving the same low price at that date. I purchased one gown at that price.

The woman was about forty-two years of age. She gave evidence of acquaintance with our relatives and friends, and implied a San Jose residence. No gowns have yet arrived. Word from the Denver Chamber of Commerce says there is no such company in Denver, she having claimed to represent the Excello Uniform Company of Denver.

We are out our purchase price of the gowns and we have no gowns. The saleswoman has never returned and we do not know where to find her. Perhaps you can locate her and suggest to her a more honest way of employment.

Peter A. Jordan, M. D.
910 Medico-Dental Building, San Jose.

Subject of this letter: A communication from the American Social Hygiene Association concerning a film—"Damaged Lives."

To the Editor:—As you know, the American Social Hygiene Association has agreed to lend its auspices to a film to be shown commercially, entitled "Damaged Lives," and we have written a scientific talk to go with the film dealing with what our special committee believes the public should know about syphilis and, incidentally, gonorrhea.

Mr. J. Frank Shea, Pacific Palisades, Los Angeles, California, is the representative of the Weldon Pictures Corporation for planning the showings of this film in the following areas: California, Washington, Oregon, Colorado, New Mexico, Arizona, Utah, and Montana. I have told him that I felt confident you would do everything you properly could to aid him in bringing this picture to the attention of the public as a mass education project conducted upon conservative and ethical lines. . . .

. . . Anything you may do, of course, will be greatly appreciated by the officers and staff of this Association.

Cordially yours,
William F. Snow,*
General Director.
450 Seventh Avenue, New York City.

Subject of this letter: A communication from the Director of Public Health of San Francisco, regarding "Body and Health" radio broadcasts.

To the Editor:—While broadcasting a few nights ago on the Safety Program of the California Automobile Association, Mr. Arthur S. Garbett, Director of Education, Pacific Division, National Broadcasting Company, called my attention to a series of articles sponsored by the University of California. The title of this series is "Body and Health." These talks are given on Friday afternoons at 3:45 o'clock.

After hearing the first speaker, Dr. Langley Porter, Dean of the Medical School of the University of California, I am convinced that every doctor should notify his patients of these lectures. Also the bulletins of the county medical societies should carry such notification of this series, which is so important to organized medicine.

It is my understanding that these talks are released through Stations KPO (San Francisco), KECA (Los Angeles), and KFSD (San Diego). I would suggest that notices of this series be placed in every clinic and every doctor's office in these localities.

Sincerely,
J. C. Geiger, M. D.,
Director of Public Health, City and County of San Francisco.

Subject of following letter: Some comments on what a State Board Examination reveals as lacking in the modern-day medical curriculum.

To the Editor:—The subject of medical education is one that has received much thought and study the last few years. We have had discussions, outlines, and a few practical experiments in changing the didactic methods. It may be of some interest and probably some practical and definite help in some phases of this problem to get the viewpoint of, and to see the results of, our modern system evidenced to a member of the Board of Medical Examiners by the answers made to some of our written examinations.

The July examination here in California—and I guess this is also true throughout the country—is taken largely by recent graduates, men who are just out of school, or who have just finished their internship. The results of five years' study are not entirely revealed by the final grade. Some answers provoke smiles, some guffaws, and some, I am sad to say, a question as to what in the world our medical schools are teaching and are not teaching. It has been interesting to the writer to find out that myopia is the most common cause of preventable blindness. He smiles to himself when he reads that the way to control a typhoid epidemc in a community is to isolate the case and report it to the health officer and let him attend to further details. You can almost snicker when you are told that birth control is one of the ways of reducing the mortality rate among children under the age of six years. I am violating no confidence, I am sure, when I report this answer to the following question: "What are the regulations in California regarding the dispensing of veronal, barbital and their derivatives?" The answer was: "The doctor may not prescribe these to anyone who, in his judgment, might use them to commit suicide. He may administer them to the patient himself if considered necessary."

There are, however, two elements in our modern medical education shown by other types of answers that must be met squarely by the medical profession and indicate faulty education and a lack of instruction which should be corrected by the medical schools. That is speaking frankly, but I think the medical profession will agree with me. In the first place, I feel that our medical schools are giving our young men an entirely wrong viewpoint of their future obligations to themselves and their fellows. Again and again the "buck" was passed to child hygiene clinics when it comes to reducing infant mortality and other related problems of childhood. Why are we educating these young practitioners to refer their patients either to the health officer or to various child hygiene, prenatal, and child-guidance clinics? I grant you that these are of value. They have come into being because we practitioners have neglected the opportunity offered to us in our daily contact with people, especially with young mothers and their new-born children.

I am not opposing clinics when properly controlled. It has been my privilege to coöperate with them, yet I feel that our young men should be trained to take on this work individually in their own offices. There is no reason why they should not do so and receive at least a small remuneration for the valuable aid and advice they are giving. Why should they fail to cultivate this fertile field that the medical profession has been so justly accused of neglecting? Has a full-time professorship brought about an economic myopia plus a clinic complex?

---

* Dr. William F. Snow resigned as Director of Public Health of the State of California to take over the directorship of the American Social Hygiene Association.

A still more vital failure in our modern medical education is evidenced by the answers made to questions covering the dispensation of narcotics. Is it to be wondered at that so many of our young men run afoul of the narcotic agents when we see the following result of their medical education, or rather this lack of vital information in the handling of narcotics?

One hundred twenty-one M. D.'s took the July examination in San Francisco. Of this number, twenty-eight said that the treatment of narcotic addiction could be administered in the patient's home; twenty-five thought it was perfectly legal to treat narcotic addiction in their own offices; seventy-six were entirely wrong, or were hopelessly "balled up'" on the provisions of the Harrison Narcotic Act—Exemptions 1 and 2, Article 85. What is the matter with the medical school or with the hospitals in which the recent graduate interns? These young men are all at sea when it comes to knowing whether they should keep records of narcotics dispensed or not. Nineteen of them apparently think the "Veronal Bill" is a federal statute and requires the use of a federal narcotic number.

May I make this little comment in parenthesis: Apparently they are still teaching that the mere filtration of water removes the typhoid bacillus. It is a long while, sad to say, since I went to school, but even in those benighted days we knew that filtration removed only the grosser particles of contamination. Prior to those times, they used to think that if water flowed for about a mile in the sunshine down the stream, it automatically purified itself and was fit for drinking water, in spite of any incidental contamination in the watershed. Evidently that, too, is still being taught in our Class A schools.

These are all matters that require no reconstruction of the curriculum, require no new professors, but simply indicate that somebody has slipped up somewhere in passing along vital information to the young men who are to be turned loose on the public.

W. H. Geistweit, Jr.

Medico-Dental Building, San Diego.

FEDERAL EMERGENCY RELIEF PLAN*

Chairman Schaupp stated that the purpose of the meeting was the discussion of plans for the home care of persons on relief, that suggested plans might be submitted to the Emergency Relief Administrator, Mr. R. C. Branion. Doctor Schaupp stated that conferences had been held in San Francisco with Mr. Branion and that Doctor Kelly, chairman of the Council, would outline the results of such discussions. Doctor Kelly stated local medical organizations in San Francisco and Los Angeles had been working on rules governing relief; that Doctors Schaupp, Dickie, and he had spent much time in conference with Mr. Branion; and that immediate action on the part of the medical profession was necessary if medical men were to have a proper share in the formulation of the principles governing such relief. Doctor Kelly then submitted tentative principles which had been worked out for submission to Mr. Branion. The principles of the plan were then discussed.

On motion of Reinle, seconded by Dukes, the Executive Committee approved the following suggested plans for the home care of the unemployed on relief during the emergency period for submission to the California Emergency Relief Administration:

1. Each local county medical society will select carefully members of a committee or an individual whose duty it shall be to examine and make recommendations upon all medical reports and bills rendered for home medical care and drugs and whose recommendations the County Relief Committee will act upon.

2. Each local county medical society will compile and maintain lists of all licensed doctors of medicine in each county who have signed a statement of their willingness to give service under this plan and to accept the fees and abide by the rules and regulations approved by the County Relief Committee and the representatives of the local county medical society.

These lists shall be arranged according to the geographical distribution of either the offices or residences of the physicians upon the lists and in such other order as may be determined upon in each county to assure proper rotation of case assignments.

3. The "working list"—the one from which case assignments are actually made—may be kept in the office of the local county medical society or the County Relief Committee or at any other place designated by the County Relief Committee, if either of the foregoing offices is not the most suitable.

4. All requests by patients for home visits by physicians must be made to a designated agent of the County Relief Committee and transmitted by him, if applicant is entitled to care, through the proper channels to the physician who is next in order for calls.

5. All licensed doctors of medicine who signify their willingness to do this service will agree to make a report to the office of the County Relief Committee immediately after the first visit to a patient, said report to be in duplicate and upon a form approved by the County Relief Committee and the representatives of the local county medical society and which shall contain not less than (1) a tentative diagnosis; (2) a recommendation for clinic, home or hospital care; (3) if home care, the estimated duration of the illness and the probable number of visits required. One copy of each report will be kept in the office of the County Relief Committee and the other sent to the committee or individual selected by the local county medical society to examine all such reports.

6. The committee or individual selected by the local county medical society will examine and pass upon all reports submitted and recommend their acceptance in whole or in part to the County Relief Committee. In the event of any difference of opinion between the representatives of the local county medical society and a physician making a report, the former shall consult with the latter before making a final recommendation.

Each County Relief Committee will, in order that physicians making the above reports may be released from the restrictions of professional confidence, insist that each applicant for relief shall sign a consent for all necessary examinations into, and reports upon, his health while he remains upon relief and a waiver and release for any professional service in excess of that authorized by the County Relief Committee.

7. It is suggested that fees for home care in the towns and in the country be discussed upon the basis of those set up in the minimum Industrial Accident Commission's fee schedule for uncomplicated home visits, as these fees, unless a considerable volume of work is done, just about cover costs. It is further suggested that visits made between 9 p. m. and 6 a. m. be charged for at higher rates than those made between 6 a. m. and 9 p. m.

Obstetrical Care. — The Association suggests that, in counties where the problem of home care arises, a flat fee be agreed upon to cover prenatal care, delivery and postnatal care.

Prenatal Care.—It is assumed that prenatal care will consist of a physical examination on the patient's first visit and not less than a monthly blood pressure determination and urinalysis until the end of the seventh month and a bimonthly blood pressure determination and urinalysis during the last two months.

This care, considering the fee charged, should be given at the physician's office whenever possible.

Delivery.—Delivery under this plan will be accomplished at home.

Postnatal Care.—Postnatal care shall consist of not less than two visits by the physician—one shortly after delivery and one before permitting the patient to leave her bed, and whatever other visits are reasonably necessary in the particular case.

Arrangements for visits by nurses will materially aid in the postnatal care of these patients.

8. Immediately upon completion of a case, and if for any reason care extends beyond a period of thirty days, on the first day of every month, physicians will submit, in duplicate and upon forms approved and provided by the County Relief Committee, bills for the services rendered by them to each patient under their care. The committee or individual of the local county medical society will examine all bills submitted and will recommend to the County Relief Committee their payment in whole or in part.

9. If any applicant for home care has had a family physician in the past and wants him again if possible, the physician in question, if on the local county list, will be asked to take the call. He may refuse if the patient is not located in his geographical area, and no mileage in cities or excess mileage in rural districts shall be authorized to give such requests effect.

10. Drafts of the medical report forms, consents, waivers, and rules suggested herein will be prepared and fur-

---

* The following text is condensed from the Executive Committee minutes of August 19, 1933. For comment concerning this topic, see editorial section of this issue, page 340.

nished by the General Counsel of the California Medical Association if desired.

Upon the approval of a plan, the California Medical Association will immediately begin, in coöperation with the Emergency Relief Administration, to aid the various county medical societies in the formation of their organization and the names of the officers of these societies will be furnished the Emergency Relief Association for distribution to the County Relief Committees.

On motion of Kress, seconded by Dukes, the following resolution was adopted:

Resolved, That a committee consisting of the president, the president-elect, the chairman of the Council, the chairman of the Executive Committee, the chairman of the Committee on Public Relations, the chairman of the Committee on Public Policy and Legislation, and the secretary be authorized to formulate the principles in accordance with the discussion and the tentative rules submitted, with power to act.

The full committee met and authorized Doctors Kelly, Schaupp, and Harris to put the approved tentative rules into proper form for presentation to the Emergency Relief Commission.

AN IMPORTANT COUNTY HOSPITAL COURT DECISION *

Kern County Supervisors Lose in County Hospital Policy Injunction Suit

From the Bakersfield *Californian* of October 17, 1933, the following is reprinted:

"Prohibiting Kern County from taking pay patients at the Kern General Hospital in competition with privately owned hospitals, Superior Judge K. Van Zante of Kings County today made known his ruling in the famous 'hospital case' here and ordered that the county Board of Supervisors be enjoined from taking pay patients at the county hospital and others except those specifically defined by law. It is understood on good authority that the county will immediately appeal the case and carry it through to the Supreme Court for a final decision on the issues of the case. Ten local doctors originally brought suit against the Board of Supervisors seeking a restraining order to prevent the county from accepting pay patients at the county hospital, patients who were given hospitalization at cost prices. The board pursued this policy as well as taking care of indigents and those unable to pay for hospitalization.

Ten Plaintiffs

"The doctors who filed the complaint against the supervisors and county are as follows: O. P. Goodall, T. M. McNamara, P. J. Cuneo, S. C. Long, N. N. Brown, F. J. Gundry, C. S. Compton, W. H. Moore, L. H. Fox, and L. C. McClain.

"Superior Judge K. Van Zante was assigned to Kern County to hear the case, which was begun in June. A great amount of testimony was adduced during the hearing, and many witnesses were examined by opposing counsel. Attorneys Siemon & Claflin and M. S. Platz represented the plaintiff doctors, and Attorneys F. E. Borton and W. A. McGinn appeared for the defendants.

"The substance of Judge K. Van Zante's order received today by F. E. Smith, county clerk, is as follows:

" 'Ordered that defendants be, and they are hereby enjoined from admitting to Kern General Hospital for hospitalization any persons other than those within the classifications enumerated in paragraph 4 of plaintiffs' amended complaint.' "

Paragraph Explained

"Thus paragraph 4 of the plaintiffs' complaint holds the key to the court's ruling. This paragraph, paraphrasing the legal statutes defining those admissible to the hospital, limits the use of the county hospital to the following:

"Indigent sick, dependent poor, psychopaths, narcotic addicts, habitual inebriates, those suffering from active tuberculosis, physically defective persons under eighteen years of age in cases where parents are unable to care for them.

"Thus the court's ruling is that the province of the hospital is to treat and care for indigents and those others specifically prescribed by law."

* * *

Physicians Win Ruling Limiting Hospital Cases

Only Indigent Poor, Emergencies, Permitted at County Hospital

The Fresno *Bee* of October 17, commenting on the Superior Court decision in the Kern County suit, under the above heading, prints:

"Superior Judge K. Van Zante issued a permanent injunction today forbidding the Kern County Board of Supervisors to admit any but indigent persons, emergency, psychopathic, and narcotic cases to the Kern General Hospital.

"The ruling, made upon a petition by ten physicians representing the Kern County Medical Society, held that the supervisors' practice of offering hospitalization to all persons is illegal.

"The Board of Supervisors was expected late today to announce an appeal from Van Zante's ruling. The officials have contended throughout a protracted fight with the physicians and private hospitals that a new state law empowers them to fix defining charges for pay patients.

"The patients to be admitted were classified by the judge in accordance with the physicians' petition. They are 'indigent sick, dependent poor, emergency, psychopathic and narcotic cases.'

"The decision, if affirmed in the higher courts, will mean a reorganization of the hospital admittance system. . . .

* * *

Additional comments from the Fresno *Bee* of October 18 on the Kern County Superior Court decision, *in re* county hospital admission of pay patients, are the following:

Hospital Ruling Puts Damper on Kings Movement

Plans for Conversion Into General Institution Balked by Decision.

"The injunction issued by Superior Judge K. Van Zante of Hanford in the Kern County Hospital case, whereby he restrained that institution from admitting pay patients, will, it is believed, probably put a damper on plans to convert the Kings County Hospital into a general hospital.

"According to District Attorney Clarence H. Wilson, the ruling by Judge Van Zante would, unless countermanded on appeal, apply in all counties in similar situations.

"The Kings County Hospital has been admitting only indigent and emergency cases, but some charges have been made in obstetrical and tonsillectomy cases where a surgeon other than the county physician has been employed.

"Several grand juries have recommended that the county hospital make plans toward adopting a general hospital program, but so far the county supervisors have not taken any official action either for or against the plan.

"Ben B. Price, former foreman of the grand jury, today expressed himself still in favor of the principle of admitting pay patients.

* * *

"While official circles here were convinced an appeal will be taken to the State Supreme Court, Dr. Joe Smith, superintendent of the Kern General Hospital, today announced the injunction issued by Superior Judge K. Van Zante here yesterday will have little effect on the operation of the hospital.

"Furthermore, according to Doctor Smith, the provisions of the restraining order, if sustained by the Supreme Court, will not require any change in the building program recently proposed for the hospital, including the immediate erection of a $250,000 hospital annex.

CARE OF PAY PATIENTS FORBIDDEN

"The injunction was issued on the application of ten Kern County physicians, comprising the county hospital committee of the Kern County Medical Association. It restrains the supervisors and other county officials from permitting the treatment of others than indigents, psychopathic patients, narcotic addicts, and habitual inebriates at the general hospital.

"Doctor Smith said that to his knowledge only four or five of the 393 patients under treatment at the institution today would be excluded as able to pay under the terms of the injunction.

"The hospital chief said the elimination of these patients would not to any important extent overcome the congested conditions which led to the adoption of the building program.

CAPACITY EXCEEDED

"Doctor Smith announced the hospital has averaged 370 patients throughout the present year, although its official capacity is but 250. He declared the institution is three years behind on construction to meet its needs.

"Fred Borton, special attorney who was associated with Civil Deputy District Attorney W. A. McGinn in opposing the application for the injunction, today predicted the supervisors will appeal the case. Borton said the injunction is now in effect and officials must abide by its terms.

"From a source close to the conduct of the case came the statement that the county's stand is considered to have as good a chance of success now as when it was presented. This theory was based on the belief that the outcome depends largely on judicial attitude in the higher court in its interpretation of the law.

RECENT TREND CITED

"It is argued the right of the people to engage through their units of government in various undertakings has been expanded by judicial rulings recently, and that a hospital is a desirable project for community organization.

"In their arguments during the trial of the case, the county's attorneys pointed out that certain kinds of equipment desirable for the treatment of diseases are very expensive and could not be made available in many communities if the purchase of this equipment were left to private hospitals.

"Under the policy of the Kern County Board, the general hospital has been open to all taxpayers, and donations of $3 a day have been accepted from persons able to pay. No forced collections were made. Many persons, including county officials, obtained treatment at the hospital, said to be one of the best equipped in the state."

---

* See also editorial comments, page 342.

TWENTY-FIVE YEARS AGO*

EXCERPTS FROM OUR STATE MEDICAL JOURNAL

Vol. VI, No. 11, November, 1908

From Some Editorial Notes.

Remarkable Gathering.—Most remarkable, in more ways than one or two, was the International Tuberculosis Congress held in Washington during the closing days of September and the early days of October. The daily press has had quite a little to say of it—particularly of those things which seemed to present some sensational features. . . .

* * *

Is It Dollars?—If one takes a dispassionate bird's-eye view of certain present conditions in American medical life, he will receive a distinct shock. Let us assume—and the assumption will be near enough the fact—that there are in the United States 125,000 physicians and 250 medical journals. . . .

* * *

What a Difference.—Comparatively recently two new hospitals have opened in San Francisco; both have been created from the medical profession, but in ways that differ as the day from night. Doubtless none save those who bore the burden can know the work and the strain and the personal sacrifices of the few men who unselfishly wrought, out of nothing, the University of California Hospital. First, a body of laymen—the regents—had to be convinced that the modern method of teaching medicine requires a hospital with patients in it. . . .

From an article on "Cancer of the Uterus—How May We Secure Its Earlier Recognition?" by W. Francis B. Wakefield, M. D., San Francisco.

Of all problems which confront the gynecologist this is the most important. It is one of the two most urgent surgical questions of the day; the necessity for earlier recognition of cancer of the stomach being the other. In both of them, to await the appearance of classical symptoms puts the patient practically beyond the pale of surgical remedy.

From an article on "Indications for Mastoid Operation" by D. H. Trowbridge, M. D., Fresno.

The general public, and I fear some physicians, look upon a suppurative ear as a matter of small importance. Some people think that the ichorous discharge from the ear is even of benefit to the system by draining out impurities from the blood. . . .

From an article on "The Pure Milk Problem" by George H. Kress, M. D., Los Angeles.

The chairman of the Pure Food Committee indicated in his report some of the work undertaken at Los Angeles in the effort to secure a supply of pure milk. It is most important that we should have milk of the certified standards, because infants and invalids should be given no other. Its extra cost, however, will prevent its universal use.

From an article on "Sanitary Supervision of Bakeries and Restaurants" by L. M. Powers, M. D., Los Angeles.

The inspection of foodstuffs from the market to the table has not engaged the attention of the sanitarian or the public to the extent that it deserves. . . .

---

* This column strives to mirror the work and aims of colleagues who bore the brunt of society work some twenty-five years ago. It is hoped that such presentation will be of interest to both old and new members.

(Continued on Page 17, Advertising Section)

BOARD OF MEDICAL EXAMINERS OF THE STATE OF CALIFORNIA*

By Charles B. Pinkham, M. D.
Secretary-Treasurer

News Items

Board Hearings.—At the annual meeting of the Board of Medical Examiners held at the State Capitol, Sacramento, October 16 to 19, inclusive, the following changes were made in the status of California licentiates:

Robert S. Friend, M. D., Happy Camp, charged with narcotic violation; license revoked October 19, 1933.

James A. Hadley, M. D., Arcata, charged wth narcotic violation; license revoked October 19, 1933.

Matthew J. Marmillion, M. D., Los Angeles, alleged illegal operation; license revoked October 19, 1933.

Rudolph F. Rohlfing, M. D., Hawthorne, charged with practicing under a fictitious name, *i. e.*, German Cancer Clinic; license revoked October 19, 1933.

Roy F. Ruth, M. D., Los Angeles, narcotic conviction; license revoked October 19, 1933.

Daniel B. van Wagenen, M. D., Ocean Beach, alleged illegal operation; license revoked October 19, 1933.

George B. de Wees, M. D., Fresno, on October 19, 1933, was placed on probation for five years.

Louis A. Frary, M. D., Los Gatos, charged with narcotic violation, on October 19, 1933, was placed on probation for a period of five years, during which time he shall not have or apply for a narcotic permit or have narcotics in his possession.

Isidor A. Wallach, M. D., Los Angeles, found guilty of aiding and abetting Christmas White and Nurse Aeberle, so-called beauty specialists, on October 18, 1933, was placed on probation for a period of five years.

Clayton E. Wheeler, M. D., San Francisco, found guilty of violation of Section 14, Subdivision 3 (alleged deceptive advertising) was placed on probation for a period of five years, with certain restrictions.

Clark Smith, M. D., license revoked February 3, 1932, was restored to practice October 16, 1933, and placed on five years' probation, without narcotic privileges.

Joseph T. Wrenn, M. D., license revoked July 16, 1929, was restored October 16, 1933, and placed on five years' probation.

Simon R. Zachariah, M. D., license revoked March 1, 1933, on narcotic dereliction, was restored October 16, 1933, and placed on five years' probation, without narcotic privileges.

The probation imposed upon Richard J. Morrison, M. D., July 11, 1933, was terminated October 19, 1933.

Forty-three applicants reported for written examination.

William R. Molony, M. D., at the October 16 meeting was elected president of the board, Clark L. Abbott, M. D., was elected vice-president, and Charles B. Pinkham, M. D., was reëlected secretary-treasurer.

From Oregon comes a warning that an impostor claiming to have practiced medicine in Pittsburgh, Pennsylvania, and also to have been associated with the Mayo Clinic, is headed this way. He is described as 5 feet 7 or 8 inches tall, dark hair, combed pompa-

---

* The office addresses of the California State Board of Medical Examiners are printed in the roster on advertising page 6.

(Continued on Page 18, Advertising Section)

New.. Petrolagar with Cascara

(Non-Bitter)

Possesses advantages of Petrolagar-Plain and Fluidextract of Cascara Sagrada

- ● ● **Softens and lubricates bowel contents**
- ● ● **Acts as a stimulant to peristalsis**

Unusually pleasant to take—(Associates Cascara with an entirely new flavor—not bitter)

Especially useful in the constipation of pregnancy

Recommended whenever Fluidextract of Cascara Sagrada is indicated

Petrolagar is a palatable emulsion of 65% (by vol.) pure mineral oil emulsified with agar-agar.

ACCEPTED AMERICAN MEDICAL ASSN Council on Pharmacy and Chemistry

The Fluidextract of Cascara contained in one average tablespoonful of **Petrolagar with Cascara** represents the physiological equivalent of 2 c. c. (½ dram) Fluidextract Cascara Sagrada U.S.P.

AVAILABLE FOR YOUR PRESCRIPTIONS AT ALL PHARMACIES IN TWO SIZES

8-ounce size : : : 16-ounce size

UNUSUAL CLINICAL TRIAL OFFER

● ● **Original Package FREE to Every Physician—Use Coupon.**

NRA MEMBER U.S. WE DO OUR PART

Mail Coupon Today!

Petrolagar Laboratories, Inc. Date____________1933
Chicago, Illinois Dept. C.W. 11
Gentlemen:

Send me Free **Petrolagar with Cascara**

☐ Special original package for personal use ☐ Samples for clinical trial

Doctor____________________________

Street____________________________

City____________________ State________

COLLECTIONS

CREDIT RATINGS
TRACING (Lost Debtors)

Non **R**ecovered **A**ccounts

Your Bureau maintains a personnel of *forty-four* trained employees for the sole purpose of helping you with your "N. R. A."—*USE IT.*

Business is improving. Send your delinquent accounts to the BUREAU and take definite advantage of this improvement.

***Organized and Operated* FOR YOU**

The Doctors Business Bureau

ESTABLISHED 1916 • • EXCLUSIVELY FOR DOCTORS

310–319 Bank of America Building
GArfield 0460
SAN FRANCISCO

Sixth Floor, Spreckels Building
TRinity 1252
LOS ANGELES

OAKLAND **SALT LAKE CITY**

(Continued from Front Advertising Section, Page 30)

by the patient. The business office of the registry might be included in the Blanket Code. This would include the nonprofessional staff in the registry office. (August 23, 1933.)

NRA in Spirit for Nursing Profession.—The attitude of the NRA toward nurses is expressed in a communication received from C. W. Smith of the NRA, Washington, D. C., by Susan C. Francis, R. N., secretary of the American Nurses' Association:

"The difficulties involved in drafting a code for a professional group such as yours are probably insurmountable and so, to a large extent, we will have to rely on you to see that the spirit of the NRA is complied with."

The Code and Professional Workers.—It is easily understood that there could be no practical application of a Blanket Code to special duty nursing, as the employer is the signer of the code. Obviously there is no method of determining future employers of special duty nurses.

California Department of Public Relations.—The California Department of Industrial Relations, T. A. Reardon, Director, in its September, 1933, report to the Governor's Council, summarized as follows:

State Compensation Insurance Fund.—The business of the State Fund for the year August, 1932, to August, 1933, shows an increase of 19 per cent. This increased business is barometric, since it is a cross section of state employment generally and should be truly reflective of a general rise in payrolls.

Recapitulation.—Conditions generally are improving, but national recovery means action—coöperative and continued action.

Signing codes half-heartedly and watching the other fellow will not do it. Hiring additional men and reducing pay for the shortened hours of the old employees means only discord. Striking for more than the tariff will bear means strife.

Let everyone, from the lowest to the highest, get behind our leader and throw himself into the job with the same enthusiasm as President Roosevelt—then there will be no worry about everyone doing his share; then we shall have complete recovery!

Sun Rays Healthful, But—— "A Swiss physician, named Rollier, years ago discovered the healing value of the direct rays of the sun upon the bodies of tuberculosis patients. With his hospital located high in the Alps, the treatment which was quite Spartan because of its year-round application, was outstandingly successful. Consequently, with modifications, it is now used the world over in every tuberculosis sanatorium. Nevertheless, the fact that the sun's rays are known to possess healing power has caused in the aggregate literally millions of hours of suffering for many thousands of persons who, isolating the fact, without more ado, subject themselves to painful sunburn at summer resorts. Unfortunately, this peculiar human trait of unsupervised adaptation of a scientific method will not only continue to do harm at beaches, but is being extended to the ultraviolet lamp," states Dr. Theodore B. Appel, secretary of Health of Pennsylvania.

"As with the sun itself, it would be wise for every person to realize that treatments by the various 'ray' methods need to be professionally controlled. In the final analysis both the sun and the ray demand careful supervision by those thoroughly familiar with their benefits, possibilities, and limitations.

"The fact that a therapeutic device readily lends itself to popular adaptation may be sufficient excuse for its commercialization. But it should be realized that ultraviolet rays may have a dangerous effect upon the eyes; that persons who do not tan readily are very poor subjects; that low blood pressure indi-

CANYON SANATORIUM
REDWOOD CITY, CALIFORNIA

An Open Air Sanatorium for the Treatment of Tuberculosis and Diseases of the Chest.

NESTLED IN THE FOOTHILLS
For booklet giving full particulars write RALPH B. SCHEIER, M. D., *Medical Director*
San Francisco Office: 516 SUTTER STREET *Telephone* DOUGLAS 4486

viduals often seriously react to the rays, and that early cases of tuberculosis may be adversely affected. Perhaps if such matters were more fully understood the use of the lamp would be under more professional supervision than it is at the present time in many cases.

"Light treatments undoubtedly have great value, including those taken at home. But their worth is likely to backfire if they are employed for self-treatment or imaginary ills. Control and knowledge are as essential in this connection as for any other treatment measure. No lamp should be used habitually unless professional advice on the matter has been obtained."—*Food Facts.*

Protection Against Radium.*—In discussing the protection of the individual in constant proximity to large amounts of radium, it may be well to first review some of the properties of these three types of invisible rays: the alpha ray, the beta ray and the gamma ray.

(1) The alpha ray is, in reality, a helium atom. A piece of paper is ample protection against it.

(2) The beta ray is actually an electron. The ray has little penetrating power as compared with the gamma ray and it may be removed by two millimeters of copper or one millimeter of platinum. One and one-half meters of air will reduce the original intensity to one-half, due to absorption alone. These rays are used clinically for superficial lesions because the rays are entirely absorbed in a few millimeters of tissue.

(3) The gamma ray is a wave motion in ether, or, to express it in other words, gamma rays belong to the electromagnetic spectrum, as do x-rays, visible light rays, ultraviolet and cosmic rays. Gamma rays have a shorter wavelength than x-rays and a longer wavelength than cosmic rays. They have great penetrating powers, and will pass through all substances to a certain extent. The ease with which these rays penetrate different materials depends upon the density of the substance through which they pass. The greater the density, the greater is the percentage of rays absorbed. Lead is one of the denser materials which can be obtained fairly inexpensively and it is, therefore, used almost exclusively for protection against gamma rays; but, in order to remove all the rays, an enormous amount of lead would be necessary. As can be imagined, any apparatus protected by such large amounts of lead would be not only too expensive, but also too unwieldy.

Second only to absorption of radiation by lead, as a means of protecting the personnel from overexposure to gamma rays, is the distance factor. We know that the intensity of gamma rays varies inversely as the square of the distance from the source; therefore, instead of trying to remove all harmful rays, we merely remove, with lead, as large a percentage as is practical and try, at all times, to keep as great a distance as possible between the operator and the radium. The element is carried about in lead containers which have long handles. We have special containers designed to carry needles, seeds, and tubes. Special lead-filled screens are provided for the needle and seed containers when in use in the clinic or dispensary in order to protect the nurses and doctors. All instruments provided for the purpose of handling radium applicators have long handles.

In spite of the measures taken to protect the body of the operator from the direct rays, there is considerable radiation which is unavoidable. This brings us to the third factor in protection, which is manual dexterity or speed of handling. The total amount of radiation, direct and indirect, which a technician receives is partly unavoidable and partly due to care-

(Continued on Next Page)

---

* By Hilda Lee Goltz, B. S.

* Reprinted in part from a paper presented at a staff meeting of the State Institute for the Study of Malignant Disease, Buffalo. Miss Goltz is Assistant Physicist at the Institute.

BRILLIANT ILLUMINATION
Free from Shadows

is the prime requisite of a good ophthalmoscope. The MAY Ophthalmoscope stands as the first choice among all physicians. The practical value of the MAY design is fully developed by the traditional quality and precision of Bausch & Lomb manufacture.

Ask to see the B & L May Ophthalmoscope and judge for yourself.

RIGGS OPTICAL COMPANY
Established in Sixty Western Cities
ASSOCIATED OPTICAL COMPANY
LOS ANGELES SAN DIEGO PHOENIX LONG BEACH SANTA ANA

THE SAN FRANCISCO BANK
SAVINGS COMMERCIAL TRUST
INCORPORATED FEBRUARY 10TH, 1868
One of the Oldest Banks in California, the Assets of which have never been increased by mergers or consolidations with other Banks.
MEMBER ASSOCIATED SAVINGS BANKS OF SAN FRANCISCO
526 California Street, San Francisco, Cal.
June 30th, 1933
Assets $159,206,708.91
Capital, Reserve and Contingent Funds $6,500,000.00
The following accounts stand on the Books at $1.00 *each, viz.:*
Bank Buildings and Lots - - - - - (Value over $2,100,000.00)
Other Real Estate - - - - - - - (Value over $520,000.00)
Pension Fund - - - - - - - - - - (Value over $800,000.00)
MISSION BRANCH .... Mission and 21st Streets
PARK-PRESIDIO BRANCH .... Clement St. and 7th Ave.
HAIGHT STREET BRANCH .... Haight and Belvedere Streets
WEST PORTAL BRANCH .... West Portal Ave. and Ulloa St.
Interest on Deposits is Computed Monthly and Compounded Quarterly, and may be withdrawn quarterly.

(Continued from Preceding Page)

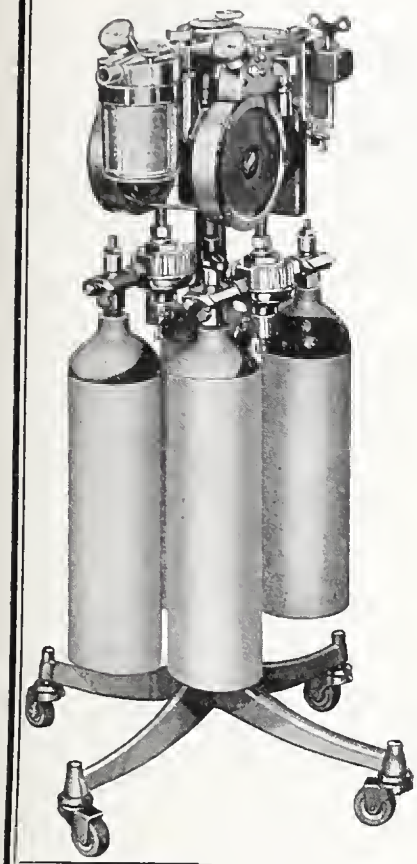
lessness and clumsiness. The hands, of course, will receive more radiation than any other part of the body, and a dexterous person may reduce this amount of exposure to a minimum by decreasing the time of handling. We have, thus, three factors which are important in protection against raduim: lead, distance, speed of handling.

The radiation received by an operator over a period of years may manifest itself in two different ways:

(1) Local effects. This becomes evident principally on the hands. The index finger and thumb naturally receive the largest amount of the softer radiation and will usually first show a slight reddening around the base of the nails. The nails become brittle, and finally the skin on the finger tips becomes leathery. It is believed by some that technicians who have been working with radium for two years and who show only a slight reddening of the skin around the nails may continue to work with radium under the same conditions, provided no further complications arise. The earlier radium workers, the pioneers, suffered far more exposure to the softer rays than we do now, and the local reactions at that time were permitted to go far beyond the point we now recognize as dangerous. As a result, many pioneers suffered severe burns which often developed into malignancy.

(2) The second way which radiation affects the body is less obvious. All authorities agree that continuous small doses of radiation change the blood picture and that the white cells are especially sensitive. It is not known, as yet, whether the white cell count is a direct measure of the effect of radiation on the individual, but it is recommended that blood counts be taken as a routine measure. This is the best criterion we have to date as to radiation effect. There is such a wide variation in white cell counts, not only between individuals, but also in the same individual from one period to another, that it is difficult to state definitely just what count represents the danger mark. The earliest sign is usually a moderate leukopenia, with an actual decrease in polys and a relative increase in lymphocytes. Generally speaking, however, we can say that a gradual steady downward trend over a

THE ANESTHETIST MUST HAVE
FAULTLESS EQUIPMENT



PERIODICALLY, we call to inspect your anesthetic equipment. This service is offered whether you use our equipment or not. It is based on the realization that *the anesthetist must have faultless equipment.* Day and night emergency service is maintained constantly for servicing and supplying apparatus for purchase or rental.

We distribute several lines of equipment, all made to the highest known standards. And, while none of it is made in our own plant, it is subjected to our own rigid inspection. The same policy of critical analyses of mechanism prevails with the same relentless vigilance as with our own medical gases. It is a fixed policy.

Certified Gases
NITROUS OXIDE · ETHYLENE · CARBON DIOXIDE
CARBOGEN · MEDICAL OXYGEN

CERTIFIED
LABORATORY PRODUCTS, LTD.
1379 Folsom St., San Francisco 1503 Gardena Ave., Glendale, Calif.
WEST COAST HOSPITAL SUPPLY COMPANY
Pacific Northwest Distributors
25 E. Sixth Street, Portland, Ore. 408 Battery Street, Seattle, Wash.

period of a few months is a signal that that individual should be removed from all exposure to radium for a time during which he should be under close observation.

In the State Institute for the Study of Malignant Disease, a rule has been established whereby three of the four technicians work with radium every month, and the fourth technician is free from all exposure during this period. This program has been followed for the last year. Blood counts are taken periodically. The actual interpretation of these counts we must leave to clinicians, but no especially alarming cases have been reported.

There is considerable difference of opinion among various authors as to the actual amounts of radiation which may be tolerated by the human body. Mutscheller and Sievert suggest a maximum of .01 of an erythema dose in one month; Barclay and Cox consider .008 as a maximum amount of exposure for the same period; Failla believes that .001 of an erythema dose, which is 600 r for x-ray, should be considered a tolerance limit for both x-ray and gamma rays for a thirty-day period.

By means of dental films the amount of exposure received by different individuals at the Institute in the performance of their work was determined. We found that the operators of the pack received .0004 of a skin erythema dose over a period of one month; the x-ray technicians received far less; the technicians pumping and measuring emanation received about .0006 and the make-up technician about .004 of an erythema dose in one month, or ten times the exposure of the pack operator. The blood counts for this period fell within the same range as previous ones, and so we concluded that these doses are within the limits of human tolerance.

Large quantities of radium for clinical purposes have not been in use long enough and not enough data have been recorded for any definite conclusions

(Continued on Next Page)

Hydro-Electro and Physiotherapy Building

Alexander Sanitarium
Incorporated
Belmont, California
Telephone Belmont 40 P. O. Box 27

Hydro-Electro and Physiotherapy Treatments. Specializing in Recuperative and Nervous Cases. Homelike Atmosphere. Absolutely Modern in every respect. Inspection invited.

22 miles from San Francisco—Situated in the beautiful foothills of Belmont, on Half Moon Bay Boulevard. The grounds consist of seven acres studded with live oaks and blooming shrubbery.

Just the place for the overworked, nervous and convalescent. Number of patients limited. Physician in attendance.

Address ALEXANDER SANITARIUM
Phone Belmont 40 Box 27, Belmont, Calif.

St. Luke's Hospital
SAN FRANCISCO
A Limited General Hospital of 200 Beds

BENJAMIN H. DIBBLEE, *President*
I. C. KNOWLTON, *Secretary*

Executive Committee
ALANSON WEEKS, M. D., *Chairman*
GEORGE D. LYMAN, M.D.
HAROLD P. HILL, M. D.
W. G. MOORE, M. D.

HOWARD H. JOHNSON, M. D.
Secretary and Medical Director

Fully approved by the American College of Surgeons and the American Medical Association for Resident and Intern Training.

Limited Facilities for Part-Pay Treatment

SUN PORCH

For the care and treatment of Nervous and Mental Diseases, Selected Alcoholic and Drug Addiction Cases

Patients referred to us by attending physicians remain in their care, except under their expressed wish to the contrary. Out of town doctors are furnished with daily reports of patient.

THE PARK SANITARIUM
1500 PAGE STREET
San Francisco California
Phone MArket 0331

SEVEN YEARS' USE
has demonstrated the value of
THE SURGICAL SOLUTION
of
MERCUROCHROME,
H. W. & D.
in
Preoperative Skin Disinfection

•

This preparation contains 2% Mercurochrome in aqueous-alcohol-acetone solution and has the advantages that:

Application is not painful.
It dries quickly.
The color is due to Mercurochrome and shows how thoroughly this antiseptic agent has been applied.
Stock solutions do not deteriorate.

•

Now available in 4, 8 and 16 oz. bottles, and in special bulk package for hospitals.

Literature on request
HYNSON, WESTCOTT & DUNNING, Inc.
Baltimore, Maryland

(Continued from Preceding Page)

to be drawn to the effects on individuals. Time alone will tell whether any permanent injury is caused by the constant exposure to radium and whether or not the protection provided at present is sufficient.—The American Society for the Control of Cancer.

Abolition of disease—and we can abolish 80 to 90 per cent of all the physical ills we suffer, outside of accident and old age—is the next great task of civilization. To abolish disease means also to abolish our greatest cause of poverty—there is no single cause, apart from feeble-mindedness, so great in producing poverty as disease. It can be done; only a pacifist attitude of mind, induced by centuries of submission to disease as something inevitable, permits disease to continue. Now that we have broken the shackles of traditional ignorance, now that we see clearly that we can be free and how to gain our freedom, it is inconceivable that we shall for many years longer bow beneath this needless and, because needless, quite intolerable burden.—H. W. Hill, M. D.

Typhoid From Raw Fish.—A group of five Japanese gardeners in San Mateo County recently ate raw smelts which had been prepared in vinegar and salt. Within a few hours afterward, all suffered from an acute intestinal disturbance and two of them developed typhoid fever.

An investigation revealed the fact that these smelts had been caught in the bay of San Francisco, near South San Francisco. It appears that young smelts feed at sewer outlets in the San Francisco Bay and when about five inches long they go to sea for further development. It is said that fishermen have been catching these young fish in the San Francisco Bay, catches being as great as four hundred pounds at a

SOILAND CLINIC

Drs. Soiland, Costolow and Meland

1407 South Hope Street, Los Angeles, Calif.
Telephone PRospect 1418
HOURS: 9:00 to 4:00

A medical group organized and equipped for the study, diagnosis and treatment of neoplastic and allied disease.

ALBERT SOILAND, M D.
WM. E. COSTOLOW, M. D.
ORVILLE N. MELAND, M. D.
A. L. LINDBERG, M. D., *Pathologist*
A. H. WARNER, Ph. D., *Physicist*

time. In cleaning the fish, fishermen have told of finding evidence of the presence of sewage in their internal organs. It is understood that until six months ago it was unlawful to catch these young fish which are found in the bay feeding at sewer outlets. Steps are being taken to prevent the practice. At all events, it is unsafe to eat raw fish, and raw clams as well, which are taken from sections of the San Francisco Bay where sewage is deposited.

California State Compensation Fund Reports:

1. A $1,000,000 cash dividend has been declared and will be distributed by the State Compensation Insurance Fund during the ensuing twelve months to employers who were covered in 1931; $200,000 of this money has been released since October 1, and checks are being mailed daily in the order of policy expirations.

2. The state fund has earned and paid dividends to policyholders each year since it opened its doors in 1914, and this without regard to the varying general business conditions confronted. The large sum of $20,500,000 has been received by California industries in that period, considerably more than $750,000 having been disbursed thus far in 1932.

3. The State Compensation Insurance Fund is one of seventy compensation insurance carriers in California, and its dividends to employers have been made possible through the maintenance of an extremely small overhead, a successful underwriting practice, and consistent returns through a sound investment policy. The state fund's business expense has averaged but 15 per cent of the premiums written, and it operates entirely without subsidy of any kind from the state and pays the same tax into California's treasury that other companies do.—*California State Department of Industrial Relations. Excerpt from Report to Governor's Council.*

BUILDING UP A PRACTICE

It takes years of training, more years of active work in the community, and a slow public recognition of worth to build a successful medical practice.

In the same way, it is no accident that Golden State Brand is the best known brand of California dairy products. It is the result of maintaining an exceedingly high quality standard, *unfailingly*, over a long period of years. Cumulative confidence follows in natural sequence.

With training, experience and equipment, Golden State men are fitted to provide the public with the world's finest food. Skilled technicians direct every step in the processing of Golden State Milk—steps which begin on the dairy farm and end only when the milk is placed on the consumer's doorstep. Only by such exacting vigilance can milk of such fine quality be assured.

You can prescribe Golden State Milk—you can use it in your own home—with utmost confidence in its superiority. A 'phone call to the plant brings service.

GOLDEN STATE DAIRY PRODUCTS

Golden State
COMPANY, LTD.
Plants Throughout California
Research Laboratories located at
425 Battery Street, San Francisco
1120 Towne Avenue, Los Angeles

Colfax School for the Tuberculous

Colfax, California

(Altitude 2400 feet)

This institution is for the treatment of medical tuberculosis and of selected cases of extrapulmonary (so-called surgical) tuberculosis.

The Colfax School for the Tuberculous consists of five Hospital Units with beds for patients who come unattended and a Housekeeping Cottage Colony for patients and their families.

The Colfax School for the Tuberculous offers the following advantages:

1. Patients are given individual care by experienced tuberculosis specialists. The patient is treated according to his individual needs.

2. Patients are taught how to secure an arrest of their disease, how to remain well when once the disease is arrested, and how to prevent the spread of the disease.

3. Patients have the advantage of modern laboratory aids to diagnosis and of all modern therapeutic agencies.

4. The climate of Colfax enables the patient to take the cure without discomfort twelve months in the year. We believe climate is secondary to medical supervision and rest, but the fact remains that it is easier to "cure" under good climatic conditions than where these climatic conditions are absent.

5. Colfax is accessible. It is on the main line of the Ogden Route of the Southern Pacific R. R. and has excellent train service. It can be reached by paved highway, being on the Victory Highway, with paved roads all the way to Colfax.

For further information address

ROBERT A. PEERS, M. D., *Medical Director*
Colfax, California

NEXT ANNUAL SESSIONS
California Medical Association, Riverside, April 30–May 3, 1934
American Medical Association, Cleveland, Ohio, June 11–15, 1934

Medical School Library
DEC 18
University of California

CALIFORNIA AND WESTERN MEDICINE

Owned and Published Monthly by the California Medical Association
FOUR FIFTY SUTTER, ROOM 2004, SAN FRANCISCO
ACCREDITED REPRESENTATIVE OF THE CALIFORNIA AND NEVADA MEDICAL ASSOCIATIONS

VOLUME XXXIX
NUMBER 6

DECEMBER · 1933

50 CENTS A COPY
$5.00 A YEAR

CONTENTS AND SUBJECT INDEX

SPECIAL ARTICLES:

Insulin-Free Pancreatic Extract and the Circulatory Hormone (Kallikrein of Frey and Kraut). By Franklin R. Nuzum and Albert H. Elliot, Santa Barbara 361
Discussion by H. O. Koefod, Santa Barbara; Hans Lisser, San Francisco.

Hyperpyrexia Baths and Epilepsy. By Helen Hopkins, Los Angeles........ 364
Discussion by Samuel D. Ingham, Los Angeles; H. Douglas Eaton, Los Angeles; Thomas G. Inman, San Francisco.

Carcinoma of the Colon—From a Roentgen Standpoint. By Carl B. Bowen, Oakland 368
Discussion by Kenneth S. Davis, Los Angeles; Robert R. Newell, San Francisco; Howard E. Ruggles, San Francisco.

Actinomycosis of the Kidney. By Theodore S. Kimball and Robert B. Haining, Los Angeles 370
Discussion by Verne C. Hunt, Los Angeles; Howard A. Ball, San Diego; Charles Pierre Mathé, San Francisco.

Clinical Tetanus. Part II. By Hyman I. Vener, A. G. Bower and J. E. McKillop, Los Angeles........ 374
Discussion by Willard J. Stone, Pasadena; Louis H. Jackson, West Los Angeles; Burrell O. Raulston, Los Angeles.

The Problem of Dysmenorrhea. By Ludwig A. Emge, San Francisco........ 380
Discussion by Clifford A. Wright, Los Angeles; John W. Sherrick, Oakland; Ruby L. Cunningbam, Berkeley.

Bismuth Injections in the Treatment of Warts. By C. J. Lunsford, R. R. Thomson, G. W. Binkley and D. S. Fox, Oakland 385
Discussion by Sophie A. Lurie, Los Angeles; Samuel Ayres, Jr., Los Angeles; Stanley O. Chambers, Los Angeles.

Female Bladder Injuries Incident to Surgery. By William E. Stevens, San Francisco 388
Discussion by Robert V. Day, Los Angeles; Lionel P. Player, San Francisco; Harry W. Martin, Los Angeles.

Treatment of Neck Glands in Cancer of Lip, Tongue, and Mouth. By Otto H. Pflueger, San Francisco 391

Human Amebiasis. By Luther Musson Boyers, Berkeley 397

Carcinoma of the Breast—Its Roentgen Treatment. By J. M. Rehfisch and L. H. Garland, San Francisco........ 401
Discussion by Leo Eloesser, San Francisco; Orville N. Meland, Los Angeles; Alson R. Kilgore, San Francisco.

LURE OF MEDICAL HISTORY:

Fifty Years of Progress in the Prevention of Disease. Part II. By J. C. Geiger, San Francisco........ 406

CLINICAL NOTES AND CASE REPORTS:

Splenic Extract—Its Effect on the Calcium of Blood Serum. By John Ferguson, Edmonton, Canada........ 409
Santonin Poisoning. By W. A. Vinks and A. W. McArthur, Lincoln........ 409
Fetal Peritonitis. By Alfred J. Scott, Jr., Los Angeles........ 410

BEDSIDE MEDICINE:

Acute Ear Disease in Childhood........ 412
Discussion by Wallace B. Smith, San Francisco; Simon Jesberg, Los Angeles; Howard W. Fleming, San Francisco.

EDITORIALS:

California Board of Medical Examiners and European Graduates........ 416
The San Fernando Plan—A Health Center Curative Clinic Experiment........ 417
Nobel Prize in Medicine Comes to California 418
Violation of State Narcotic Act Dangerous 41

EDITORIAL COMMENT:

The Rôle of Hydrogen Ion Concentration (pH) in Certain Ocular Symptoms. By George N. Hosford, San Francisco 419
Relapsing Fever in California. By George E. Coleman, San Francisco........ 420
Tularemia. By George R. Magee, Yerington, Nevada 421
Retinal Detachment—Diathermy Puncture and Coagulation. By Dohrmann K. Pischel, San Francisco........ 421

STATE MEDICAL ASSOCIATIONS:

CALIFORNIA MEDICAL ASSOCIATION........ 422
C. M. A. Department of Public Relations........ 426
Woman's Auxiliary to the C. M. A........ 427
NEVADA STATE MEDICAL ASSOCIATION 429

MISCELLANY:

News 430
Correspondence 431
Twenty-Five Years Ago 432
Board of Medical Examiners of the State of California 432
California Medical Association Directories........ Adv. pages 2, 4, 6
Book Reviews .... Adv. page 11

ADVERTISEMENTS—INDEX:

.... Adv. page 8

"Entered as second-class matter at the post office at San Francisco, California, under the Act of March 3, 1879." Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized August 10, 1918.

GREENS' EYE HOSPITAL

. . . for Consultation, Diagnosis, and Treatment of the Eye.

BUSH AT OCTAVIA STREET

San Francisco

Telephone
WEst 4300

THE HOSPITAL

As an aid in the study and diagnosis of eye conditions, Greens' Eye Hospital maintains a fully equipped

Ear, Nose, and Throat Department

This department is conducted on the same basis as the eye clinic and is open to all patients for the treatment of Ear, Nose, and Throat.

●

EMERGENCY EYE SERVICE

A twenty-four hour emergency eye service including Sundays and holidays is now available with an Ophthalmologist on duty.

Staff

OPHTHALMOLOGY
Aaron S. Green, M. D.
Louis D. Green, M. D.
Martin I. Green, M. D.
Einar V. Blak, M. D.
Vincent V. Suglian, M. D.

OTOLARYNGOLOGY
Lafayette P. Monson, M. D.

Address Communications to Superintendent

BUSH

Patronize Your Home Firm

BECAUSE WE ARE PROGRESSIVE

Of Interest to the Medical Profession

In the November issue of the *California and Western Medicine,* we described our organization in Los Angeles. Our San Francisco office is located at 334 Sutter Street, since 1916, occupying the entire second floor of the Gallois Building, devoted to offices, maintenance, and shipping; the first floor to sales and demonstration. We wish at this time to express through the medium of this Journal our appreciation of the hearty coöperation of the medical profession, and wishing you a Merry Christmas and a Happy and Prosperous New Year.

Exclusive Distributors for

KELLEY KOETT MFG. CO. ✓ BURDICK CORPORATION
CAMBRIDGE INSTRUMENT COMPANY (Cardiographs)

THE PERSONNEL

GEO. L. BUSH, *President*

G. McCLURKIN	*Office Manager*	F. L. SCHOENBORN	*Sales Department*
MRS. E. BROUWER	*Office*	C. H. CURREY	*Sales Department*
LOUISE JONGSTE	*Office*	A. W. PARKIN	*Sales Department*
MRS. A. HALLAS	*Office*	GENE BLANK	*Shipping Department*
MISS J. MARTIN	*Office*	ALBERT BUSH	*Maintenance Manager*
MISS B. KIMBALL	*Office*	ALFRED ABEND	*Service Department*
G. DOMENICI	*Sales Department*	J. DE BEAUMONT	*Service Department*
GEORGE WAIDNER	*Sales Department*	GORDON BUSH	*Service Department*

BUSH ELECTRIC CORPORATION

334 Sutter Street
SAN FRANCISCO, CALIF.
EXbrook 5090

2016 Wilshire Boulevard
LOS ANGELES, CALIF.
EXposition 1189

BUSH

Officers of the California Medical Association

General Officers

President—George G. Reinle, 204 Dalziel Building, 532 Fifteenth Street, Oakland.

President-Elect—Clarence G. Toland, 902 Wilshire Medical Building, 1930 Wilshire Boulevard, Los Angeles.

Speaker of House of Delegates—Edward M. Pallette, 502 Wilshire Medical Building, 1930 Wilshire Boulevard, Los Angeles.

Vice-Speaker of House of Delegates—John H. Graves, 977 Valencia Street, San Francisco.

Chairman of Council—T. Henshaw Kelly, 830 Medico-Dental Building, 490 Post Street, San Francisco.

Vice-Chairman, Morton R. Gibbons, Union Square Building, 350 Post Street, San Francisco.

Chairman of Executive Committee—Karl L. Schaupp, 530 Medico-Dental Building, 490 Post Street, San Francisco.

Chairman of the Committee on Public Relations—Charles A. Dukes, 601 Wakefield Building, 426 Seventeenth Street, Oakland.

Secretary-Treasurer—Emma W. Pope, Four Fifty Sutter Street, Room 2004, San Francisco.

Editor—George H. Kress, 945 Roosevelt Building, 727 West Seventh Street, Los Angeles.

General Counsel—Hartley F. Peart, Room 1800, 111 Sutter Street, San Francisco.

Associate General Counsel—Hubert T. Morrow, Van Nuys Building, 210 West Seventh Street, Los Angeles

Councilors

District Councilors

First District—Imperial, Orange, Riverside, and San Diego Counties, W. W. Roblee (1935), 202 Mission Inn Rotonda, Riverside.

Second District—Los Angeles County, Carl R. Howson (1936), 711 Merritt Building, 307 West Eighth Street, Los Angeles.

Third District—Kern, San Bernardino, San Luis Obispo, Santa Barbara and Ventura Counties, Henry J. Ullmann (1934), 1520 Chapala Street, Santa Barbara.

Fourth District—Calaveras, Fresno, Inyo, Kings, Madera, Mariposa, Merced, Mono, San Joaquin, Stanislaus, Tulare and Tuolumne Counties, Fred R. DeLappe (1935), 218 Beaty Building, 1024 J Street, Modesto.

Fifth District—Monterey, San Benito, San Mateo, Santa Clara and Santa Cruz Counties, Alfred L. Phillips (1936), Farmers and Merchants Bank Building, Santa Cruz.

Sixth District—San Francisco County, Karl L. Schaupp (1934), 530 Medico-Dental Building, 490 Post Street, San Francisco.

Seventh District—Alameda and Contra Costa Counties, Oliver D. Hamlin (1935), Federal Realty Building, Oakland.

Eighth District—Alpine, Amador, Butte, Colusa, El Dorado, Glenn, Lassen, Modoc, Nevada, Placer, Plumas, Sacramento, Shasta, Sierra, Sutter, Tehama, Yolo, and Yuba Counties, C. E. Schoff (1936), 322 Medico-Dental Building, 1127 Eleventh Street, Sacramento.

Ninth District—Del Norte, Humboldt, Lake, Marin, Mendocino, Napa, Siskiyou, Solano, Sonoma and Trinity Counties, Henry S. Rogers (1934), Petaluma.

Councilors-at-Large

George G. Hunter (1935), 910 Pacific Mutual Building, 523 West Sixth Street, Los Angeles.

C. O. Tanner (1936), 3255 Fourth Street, San Diego.

William H. Kiger (1934), 911 Wilshire Medical Building, 1930 Wilshire Boulevard, Los Angeles.

Morton R. Gibbons (1935), Union Square Building, 350 Post Street, San Francisco.

T. Henshaw Kelly (1936), 830 Medico-Dental Building, 490 Post Street, San Francisco.

Junius B. Harris (1934), Medico-Dental Building, 1127 Eleventh Street, Sacramento.

Standing Committees

Executive Committee

The President, the President-elect, the Speaker of the House of Delegates, the Chairman of the Council, the Chairman of the Auditing Committee, the Chairman of the Committee on Public Relations, the Secretary-Treasurer and the Editor. (Karl L. Schaupp, chairman; Emma W. Pope, secretary.)

Auditing Committee

O. D. Hamlin	Oakland	1933
Morton R. Gibbons	San Francisco	1933
Karl L. Schaupp (Chairman)	San Francisco	1933

Committee on Associated Societies and Technical Groups

R. Manning Clarke (Chairman)	Los Angeles	1934
Clifford Sweet	Oakland	1935
William H. Geistweit	San Diego	1936

Committee on Extension Lectures

Robert T. Legge (Chairman)	Berkeley	1934
James F. Churchill	San Diego	1935
J. Homer Woolsey	San Francisco	1936

Secretary ex officio

Committee on Health and Public Instruction

Langley Porter	San Francisco	1934
Fred B. Clarke (Chairman)	Long Beach	1935
W. R. P. Clark	San Francisco	1936

Committee on History and Obituaries

George D. Lyman	San Francisco	1934
Charles D. Ball (Chairman)	Santa Ana	1935
J. Marion Read	San Francisco	1936

Secretary ex officio
Editor ex officio

Committee on Hospitals, Dispensaries and Clinics

Karl L. Schaupp	San Francisco	1934
John C. Ruddock	Los Angeles	1935
Daniel Crosby (Chairman)	Oakland	1936

Committee on Industrial Practice

Harry E. Zaiser	Orange	1934
Morton R. Gibbons (Chairman)	San Francisco	1935
Mott H. Arnold	San Diego	1936

Committee on Medical Defense

Henry Snure, Sr. (Chairman)	Los Angeles	1934
George G. Reinle	Oakland	1935
Fred R. De Lappe	Modesto	1936

Committee on Medical Economics

Willard Stone	Pasadena	1934
John H. Graves (Chairman)	San Francisco	1935
William R. Molony, Sr.	Los Angeles	1936

Committee on Medical Education and Medical Institutions

H. A. L. Ryfkogel	San Francisco	1934
George Dock (Chairman)	Pasadena	1935
George G. Hunter	Los Angeles	1936

Committee on Membership and Organization

LeRoy Brooks	San Francisco	1934
Harry H. Wilson (Chairman)	Los Angeles	1935
Dewey R. Powell	Stockton	1936

Secretary ex officio

Committee on Publications

Percy T. Magan (Chairman)	Los Angeles	1934
Ruggles A. Cushman	Talmage	1935
Frederick F. Gundrum	Sacramento	1936

Secretary ex officio
Editor ex officio

Committee on Public Policy and Legislation

E. T. Remmen	Glendale	1934
Junius B. Harris (Chairman)	Sacramento	1935
Fred R. De Lappe	Modesto	1936

President ex officio
President-elect ex officio

Committee on Scientific Work

Lemuel P. Adams	Oakland	1934
J. Homer Woolsey	Woodland	1935
F. M. Pottenger	Monrovia	1936

H. O. Koefod, Secretary of Section on General Medicine, ex officio
Edwin M. Taylor, Secretary of Section on General Surgery, ex officio
Emma W. Pope (Chairman), ex officio

Committee on Arrangements (Annual Session 1934)

William W. Roblee (Chairman)	Riverside	1934
Hervey S. Faris	Riverside	1934
G. Wayland Coon	Riverside	1934
Bon O. Adams	Riverside	1934
Arthur W. Walker	Riverside	1934

Committee on Public Relations

The Committee on Public Relations consists of the chairmen of the following standing committees and of certain general officers of the Association, all serving ex officio. The chairman of the committee is Dr. Charles A. Dukes, the secretary is Dr. Emma W. Pope. The director of the Department of Public Relations is Dr. Walter M. Dickie.

Fred B. Clarke	Chair., Com. on Health and Public Instruction
Daniel Crosby	Chair., Com. on Hospitals, Dispensaries, Clinics
Morton R. Gibbons	Chair., Com. on Industrial Practice
Harry H. Wilson	Chair., Com. on Membership and Organization
John H. Graves	Chair., Com. on Medical Economics
Junius B. Harris	Chair., Com. on Public Policy and Legislation
Charles A. Dukes	Chair., Cancer Commission
George G. Reinle	President of the California Medical Association
Clarence G. Toland	President-elect
Emma W. Pope	Secretary-Treasurer

Communications for the Public Relations Department should be addressed to the Director, Dr. Walter M. Dickie, Room 2039, 450 Sutter Street, San Francisco.

Cancer Commission

Charles A. Dukes (Chairman)	Oakland	1934
Lyell C. Kinney (Vice-Chairman)	San Diego	1934
Alson R. Kilgore (Secretary)	San Francisco	1934
Orville Meland (Sec'y for Southern Section)	Los Angeles	1935
A. Herman Zeiler	Los Angeles	1935
Gertrude Moore	Oakland	1935
Harold Brunn	San Francisco	1936
Henry J. Ullmann	Santa Barbara	1936
Clarence G. Toland	Los Angeles	1936

Communications for the Cancer Commission should be addressed to the Secretary, A. R. Kilgore, M. D., Room 2039, 450 Sutter Street, San Francisco.

(Roster lists continued on advertising page 4)

SPECIAL MOTORCYCLE SERVICE

HOURS: Week Days, 8 A.M. to 9 P.M. . . . . Sundays, 9-1, 6-8

Special attention given all telephone prescriptions. Four stores will furnish special motorcycle service delivery to any part of the city at any hour of the day or evening.

Broemmel's Prescription Pharmacies

ESTABLISHED 1868

SERUMS ✓ VACCINES ✓ ANTITOXINS

Third Floor Medico-Dental Bldg.
Post and Mason Streets
Telephones: GArfield 0265-0266

California and Steiner Streets
Telephones: WEst 0558-0559
Fourth Floor, 450 Sutter
Telephones: GArfield 4486-4487

Second Floor, Fitzhugh Bldg.
Post and Powell Streets
Telephones: GArfield 4417-4418-4419-4420-4421-4422

LAS ENCINAS - - - PASADENA, CALIF.

A SANITARIUM FOR THE TREATMENT OF GENERAL AND NERVOUS DISEASES

Board of Directors: George Dock, M. D., *President;* W. Jarvis Barlow, M. D.; Stephen Smith, M. D.; Charles W. Thompson, M. D.; George Hunter, M. D.

Address: STEPHEN SMITH, M.D., F.A.C.P., or CHARLES W. THOMPSON, M.D., F.A.C.P., Medical Directors
LAS ENCINAS, PASADENA, CALIFORNIA

What Every Woman Does Not Know—How to Give Cod-Liver Oil.—What every woman does not know is that psychology is more important than flavoring in persuading children to take cod-liver oil. Some mothers fail to realize, so great is their own distaste for cod-liver oil, that most babies will not only take the oil if properly given, but will actually enjoy it. Proof of this is seen in orphanages and pediatric hospitals, where cod-liver oil is administered as a food in a matter of fact manner, with the result that refusals are rarely encountered.

The mother who wrinkles her nose and "makes a face" of disgust as she measures out cod-liver oil is almost certain to set the pattern for similar behavior on the part of her baby.

Most babies can be taught to take the pure oil if, as Eliot points out, the mother looks on it with favor and no unpleasant associations are attached to it. If the mother herself takes some of the oil, the child is further encouraged.

The dose of cod-liver oil may be followed by orange juice; but if administered at an early age, usually no vehicle is required. The oil should not be mixed with the milk or the cereal feeding unless allowance is made for the oil which clings to the bottle or the bowl.

Mead's 10 D Cod-Liver Oil is made from Mead's Newfoundland Cod-Liver Oil. In cases of fat intolerance the former has an advantage, since it can be given in one-third to one-half the usual cod-liver oil dosage.

Red Cross in Long Beach Earthquake Disaster.—Among the contributors to relief of the victims of the Long Beach earthquake last March were many beneficiaries of the Red Cross flour and cotton distribution. They had been assisted themselves, in their hour of need, and now made grateful return with such gifts as they could bring.

Dewar & Hare Electric Co.

Manufacturers and Distributors

X-Ray and Physiotherapy Equipment
and
Aurora X-Ray Corporation Products

X-Ray Apparatus ✓ Quartz Ultra Violet Lamps
Infra Red Lamps ✓ Accessories
"Thermotax" Diathermy ✓ "Electrotax" Sine Wave

386 SEVENTEENTH STREET, *near Franklin St.*
Telephone GLencourt 9273 Oakland, California

A San Francisco Organization

Shumate Drug Company

DISPENSING CHEMISTS

Catering to the Medical Profession
Since 1890

Officers of Scientific Sections of California Medical Association

Anesthesiology

Chairman, John Miller Wilson, 605 Professional Building, Pasadena.
Secretary, Ethel Righetti, 319 Walnut Street, San Francisco.

Dermatology and Syphilology

Chairman, Louis F. X. Wilhelm, 410 California Medical Building, 1401 South Hope Street, Los Angeles.
Vice-Chairman, C. E. Schoff, 322 Medico-Dental Building, 1127 Eleventh Street, Sacramento.
Secretary, Philip K. Allen, 314 Medico-Dental Building, 233 A Street, San Diego.

Eye, Ear, Nose and Throat

Chairman, J. Roy Jones, California State Life Building, Sacramento.
Vice-Chairman, Harold A. Fletcher, 1440 Medico-Dental Building, 490 Post Street, San Francisco.
Secretary, Samuel A. Durr, 1304 Medico-Dental Building, 233 A Street, San Diego.

General Medicine

Chairman, Fred H. Kruse, 916 Fitzhugh Building, 384 Post Street, San Francisco.
Secretary, Hilmar O. Koefod, 1421 State Street, Santa Barbara.

General Surgery

Chairman, Joseph K. Swindt, 546 Investment Building, Pomona.
Secretary, Edwin M. Taylor, 230 Grand Avenue, Oakland.
Assistant Secretary, William P. Kroger, 902 Wilshire Medical Building, 1930 Wilshire Boulevard, Los Angeles.

Industrial Medicine and Surgery

Chairman, John J. Loutzenheiser, Union Square Building, 350 Post Street, San Francisco.
Secretary, J. Minton Meherin, 507 Union Square Building, 350 Post Street, San Francisco.

Neuropsychiatry

Chairman, Clifford W. Mack, Livermore Sanitarium, Livermore.
Vice-Chairman, Helen Hopkins, 925 Pacific Mutual Building, 523 W. Sixth Street, Los Angeles.
Secretary, H. Douglas Eaton, 811 Medical Office Building, 1136 West Sixth Street, Los Angeles.

Obstetrics and Gynecology

Chairman, Alice F. Maxwell, University of California Hospital, Fourth and Parnassus Avenues, San Francisco.
Vice-Chairman, Emil F. Krahulik, 1021 Taft Building, 1680 N. Vine Street, Hollywood.
Secretary, H. A. Stephenson, 521 Medico-Dental Building, 490 Post Street, San Francisco.

Pathology and Bacteriology

Chairman, George D. Maner, 657 South Westlake Avenue, Los Angeles.
Secretary, Emil Bogen, Olive View Sanitarium, Olive View.
Assistant Secretary, Zera E. Bolin, 450 Sutter Street, San Francisco.

Pediatrics

Chairman, Francis S. Smyth, University of California Hospital, Fourth and Parnassus Avenues, San Francisco.
Secretary, Henry E. Stafford, 242 Moss Avenue, Oakland.
Assistant Secretary, Sam J. McClendon, 2001 Fourth Street, San Diego.

Radiology

Chairman, Robert S. Stone, University of California Hospital, Fourth and Parnassus Avenues, San Francisco.
Secretary, Kenneth S. Davis, St. Vincent's Hospital, 2131 Ocean View Boulevard, Los Angeles.

Urology

Chairman, Lewis Michelson, 434 Medico-Dental Building, 490 Post Street, San Francisco.
Secretary, George F. Schenck, 308 Wilshire Medical Building, 1930 Wilshire Boulevard, Los Angeles.

Officers of County Medical Associations

Alameda County Medical Association

2404 Broadway, Oakland
President, Dexter N. Richards, 400 29th St., Oakland.
Secretary, Gertrude Moore, 2404 Broadway, Oakland.

Butte County Medical Society

President, Dan H. Moulton, Box 520, Chico.
Secretary, J. O. Chiapella, Chiapella Building, Chico.

Contra Costa County Medical Society

President, L. H. Fraser, American Trust Bldg., Richmond.
Secretary, Clara H. Spalding, 331 Eighth Street, Richmond.

Fresno County Medical Society

President, Elmer J. Schmidt, 612 T. W. Patterson Building, Fresno.
Secretary, Neil J. Dau, 1111 Fulton St., Fresno.

Humboldt County Medical Society

President, Lane Falk, 507 F Street, Eureka.
Secretary, L. A. Wing, Eureka.

Imperial County Medical Society

President, John L. Parker, Brawley.
Secretary, George C. Holleran, Brawley.

Kern County Medical Society

President, Perryman F. Page, Box 426, Taft.
Secretary, Seymour Strongin, San Joaquin Hospital, Bakersfield.

Kings County Medical Society

President, C. G. Newbecker, Hanford.
Secretary, Benjamin H. Pratt, First National Bank Building, Lemoore.

Lassen-Plumas County Medical Society

President, Bert J. Lasswell, Quincy.
Secretary, C. I. Burnett, Knoch Building, Susanville.

Los Angeles County Medical Association

1925 Wilshire Boulevard
President, Charles T. Sturgeon, 1930 Wilshire Boulevard, Los Angeles.
Secretary, Harry H. Wilson, 1925 Wilshire Boulevard, Los Angeles.

Marin County Medical Society

President, John H. Kuser, Cheda Building, San Rafael.
Secretary, Carl W. Clark, Albert Building, San Rafael.

Mendocino County Medical Society

President, R. A. Babcock, Willits.
Secretary, Paul J. Bowman, Fort Bragg.

Merced County Medical Society

President, B. E. McDowell, Bank of Italy Building, Merced.
Secretary, Fred O. Lien, Shaffer Building, Merced.

Monterey County Medical Society

President, R. M. Fortier, 2 McDougall Building, Salinas.
Secretary, John A. Merrill, 308 Spazier Building, Monterey.

Napa County Medical Society

President, C. A. Johnson, Gordon Building, Napa.
Secretary, M. M. Booth, 1379 Main Street, St. Helena.

Orange County Medical Society

President, William S. Wallace, 207 W. Chapman Street, Orange.
Secretary, Waldo S. Wehrly, 620 N. Main Street, Santa Ana.

Placer County Medical Society

President, L. B. Barnes, Newcastle.
Secretary, R. A. Peers, Colfax.

Riverside County Medical Society

President, Hervey S. Farris, 3616 Main Street, Riverside.
Secretary, T. A. Card, Glenwood Block, Riverside.

Sacramento Society for Medical Improvement

President, George A. Briggs, 409 Farmers and Mechanics Bank Bldg., Sacramento.
Secretary, Frank W. Lee, 510 Physicians Building, 1027 Tenth Street, Sacramento.

San Benito County Medical Society

President, L. C. Hull, Hollister.
Secretary, L. E. Smith, Hollister.

San Bernardino County Medical Society

President, Fred B. Moor, Loma Linda.
Secretary, E. J. Eytinge, 47 East Vine Street, Redlands.

San Diego County Medical Society

Fourteenth Floor, Medico-Dental Building, 233 A Street, San Diego
President, Clair L. Stealy, 2001 Fourth St., San Diego.
Secretary, William H. Geistweit, Jr., 810 Medico-Dental Building, 233 A Street, San Diego.

San Francisco County Medical Society

2180 Washington Street, San Francisco
President, Karl L. Schaupp, 530 Medico-Dental Bldg., 490 Post St., San Francisco.
Secretary, Mary Jones-Mentzer, 2180 Washington St., San Francisco.

San Joaquin County Medical Society

President, J. F. Doughty, 231 W. 11th St., Tracy.
Secretary, C. A. Broaddus, 907 Medico-Dental Building, 242 North Sutter Street, Stockton.

San Luis Obispo County Medical Society

President, W. D. Butler, 1114 Chorro Street, San Luis Obispo.
Secretary, Allen F. Gillihan, San Luis Obispo.

San Mateo County Medical Society

President, Benjamin H. Page, 231 Second Avenue, San Mateo.
Secretary, H. H. Ray, 23 Second Avenue, San Mateo.

(Roster lists continued on advertising page 6)

Santa Barbara County Medical Society

President, M. J. Geyman, 1520 Chapala Street, Santa Barbara.
Secretary, William H. Eaton, Health Department, Santa Barbara.

Santa Clara County Medical Society

President, George L. Barry, 700 Medico-Dental Building, San Jose.
Secretary, E. O. G. Schmitt, 608 Medico-Dental Building, San Jose.

Santa Cruz County Medical Society

President, O. C. Marshall, New Register Building, Watsonville.
Secretary, Samuel B. Randall, Farmers and Merchants Natl. Bank Bldg., Santa Cruz.

Shasta County Medical Society

President, Earnest Dozier, Masonic Building, Redding.
Secretary, F. H. Olberg, Craddock Building, Redding.

Siskiyou County Medical Society

President, W. E. Hart, Yreka.
Secretary, Joseph Langer, Hilt.

Solano County Medical Society

President, Philip B. Fry, Benicia.
Secretary, John W. Green, 427 Sacramento Street, Vallejo.

Sonoma County Medical Society

President, Mark L. Lewis, 41 Main Street, Petaluma.
Secretary, W. C. Shipley, 533 Mendocino Avenue, Santa Rosa.

Stanislaus County Medical Society

President, Donald L. Robertson, 1003 12th Street, Modesto.
Secretary, J. A. Porter, 209 Beaty Bldg., 1024 J St., Modesto.

Tehama County Medical Society

President, F. L. Doane, Red Bluff.
Secretary, F. J. Bailey, Red Bluff.

Tulare County Medical Society

President, Frank Kohn, County Hospital, Tulare.
Secretary, Karl F. Weiss, Security First National Bank Building, Visalia.

Ventura County Medical Society

President, F. Royal Hendricks, 620 E. Main St., Ventura.
Secretary, Wm. Felberbaum, 134 N. 10th St., Santa Paula.

Yolo-Colusa-Glenn County Medical Society

President, Oscar C. Railsback, Woodland Clinic, Woodland.
Secretary, G. W. Desrosier, Colusa.

Yuba-Sutter County Medical Society

President, T. E. Larner, I. O. O. F. Building, Marysville.
Secretary, Fred W. Didier, Wheatland.

"*For those who are* UNDERWEIGHT"

At this season of the year when bodily resistance is at its lowest ebb and so many patients—particularly little children—are underweight, it is well to remember that Maltine With Cod Liver Oil has been prescribed by physicians for more than 50 years to correct those very conditions. One physician* writes us, "For those who are underweight I prescribe Maltine With Cod Liver Oil."

While the value of cod liver oil as an aid in building up resistance and weight is thoroughly recognized, it is a matter of concern to physicians that plain cod liver oil is not well tolerated by some infants and children. Maltine With Cod Liver Oil, on the other hand, is well tolerated and easily assimilated by all ages.

Containing, as it does, 70% Maltine —a concentrated liquid extract of the nourishing elements of malted barley, wheat and oats—good sources of vitamins B and G, and 30% pure, vitamin-tested cod liver oil of high potency in vitamins A and D, Maltine With Cod Liver Oil is not only rich in the four vitamins, but in other elements essential to health and growth.

Maltine With Cod Liver Oil is biologically standardized and guaranteed to contain four vitamins—A, B, D and G. When administered in either orange or tomato juice, vitamin C is added. Biological report sent to physicians on request. The Maltine Company, *Est.* 1875, 30 Vesey Street, New York, N. Y.

* *Name on request.*

This Trade-mark Identifies the Only Genuine

Maltine

Reg. U. S. Pat. Off.

WITH COD LIVER OIL

Introduced in 1875

Member NRA
We do our part

Certifoods—sieved vegetables of known and guaranteed vitamin potency. Prepared by an exclusive process which conserves maximum vitamin values, proteins, calories and mineral salts—particularly iron and phosphorus. Prepared by Certifoods, Inc., subsidiary of The Maltine Company.

Woman's Auxiliary to the California Medical Association

State Auxiliary Officers

President, Mrs. Andrew Mitchell Henderson, 1600 M Street, Sacramento.

President-Elect, Mrs. Philip Schuyler Doane, 855 Oak Knoll Circle, Pasadena.

First Vice-President, Mrs. Paul A. Quaintance, 809 South Orange Drive, Los Angeles.

Second Vice-President, Mrs. Thomas Clark, 40 Ross Circle, Oakland.

Recording Secretary, Mrs. Ruggles A. Cushman, Talmage.

Corresponding Secretary, Mrs. Charles E. Von Geldern, 1325 Fortieth Street, Sacramento.

Treasurer, Mrs. F. N. Scatena, 1400 Forty-first Street, Sacramento.

Officers of County Auxiliaries

Alameda County — President, Mrs. Charles Dukes, 211 The Uplands, Oakland.

Contra Costa County—President, Mrs. U. S. Abbott, 5490 Barrett Avenue, Richmond.

Los Angeles County — President, Mrs. A. Bennett Cooke, Pasadena.

Mendocino County—Mrs. R. A. Cushman, Talmage.

Napa County—President, Mrs. W. L. Blodget, Calistoga.

Orange County—Mrs. C. S. O'Toole, Anaheim.

Riverside County — Mrs. A. W. Walker, Riverside.

Sacramento County—President, Mrs. Frederick N. Scatena, Sacramento.

San Bernardino County—President, Mrs. C. G. Hilliard, Redlands.

San Diego County—President, Mrs. Charles E. Howard, San Diego.

San Joaquin County—President, Mrs. P. B. Gallegos, Stockton.

Santa Barbara County—President, Mrs. R.T. Atsatt, Santa Barbara.

San Luis Obispo County—Mrs. Deon A. Crew, 846 Higuera Street, San Luis Obispo.

Sonoma County—President, Mrs. Henry S. Rogers, Petaluma.

Delegates and Alternates to the American Medical Association

DELEGATES		ALTERNATES
C. A. Dukes, Oakland	(1934)	Edward N. Ewer, Oakland
Carl R. Howson, Los Angeles	(1934)	Edward M. Pallette, Los Angeles
Junius B. Harris, Sacramento	(1934)	John Hunt Shepard, San Jose
William R. Molony, Sr., Los Angeles	(1934)	John C. Ruddock, Los Angeles
Elbridge Best, San Francisco	(1934-1935)	Robert S. Stone, San Francisco
Lyell C. Kinney, San Diego	(1934-1935)	Harry H. Wilson, Los Angeles
Fred B. Clarke, Long Beach	(1934-1935)	A. J. Scott, Los Angeles

Miscellaneous California Medical Organizations

California State Department of Public Health

San Francisco—State Office Building, McAllister and Larkin Streets. UNderhill 8700.

Sacramento—State Office Building, Tenth and L Streets. CApital 2800.

Los Angeles — State Office Building, 217 West First Street. MAdison 1281.

President, John H. Graves, San Francisco.

Director, Giles S. Porter, Los Angeles.

Board of Medical Examiners of the State of California

San Francisco, Rm. 512, 450 McAllister St.

Los Angeles, 812 Associated Realty Building 510 West Sixth Street

Sacramento, 420 State Office Building

President, William R. Molony, Sr., Los Angeles.

Secretary, C .B. Pinkham, Room 512, 450 McAllister Street, San Francisco.

Southern California Medical Association

President, Bon O. Adams, Riverside.

Secretary, Robert W. Langley, 1002 Wilshire Medical Building, 1930 Wilshire Boulevard, Los Angeles.

California Northern District Medical Society

President, D. Schuyler Pulford, California State Life Building, Sacramento.

Secretary, Edward S. Babcock, 820 Medico-Dental Building, 1127 Eleventh Street, Sacramento.

Pacific Roentgen Club

Chairman, Lowell S. Goin, 1930 Wilshire Boulevard, Los Angeles.

Secretary, L. H. Garland, 450 Sutter Street, San Francisco.

Better Health Foundation

President, Reginald Knight Smith, 490 Post Street, San Francisco.

Chairman, Executive Committee, Walter B. Coffey, 65 Market Street, San Francisco.

Treasurer, John Gallwey, 1195 Bush Street, San Francisco.

Secretary, Celestine J. Sullivan, 490 Post Street, San Francisco.

Nevada State Medical Association

D. A. SMITH, Mina	President
E. E. HAMER, Carson City	President-elect
J. N. VAN METER, Las Vegas	First Vice-President
W. H. FROLICH, East Ely	Second Vice-President
HORACE J. BROWN, Reno	Secretary-Treasurer
HORACE J. BROWN, Reno	Delegate
FLEET H. HARRISON, Minden	Alternate

Hospitals and Sanatoriums

The Institutions here listed have announcements in this issue of CALIFORNIA AND WESTERN MEDICINE. For Index, see advertising page 8.

ALEXANDER SANITARIUM
Nervous and Mild Mental Diseases
Belmont, California

CALIFORNIA SANITARIUM
For Treatment of Tuberculosis
Belmont, California

CANYON SANATORIUM
For the Treatment of Tuberculosis
Redwood City, California

COLFAX SCHOOL FOR THE TUBERCULOUS
For the Treatment of Tuberculosis
Colfax, California

COMPTON SANATORIUM AND LAS CAMPANAS HOSPITAL, COMPTON
Neuropsychiatric and General

DANTE SANATORIUM
Limited General Hospital
Van Ness and Broadway, San Francisco

FRANKLIN HOSPITAL
Limited General Hospital
Fourteenth and Noe Streets, San Francisco

FRENCH HOSPITAL
General Hospital
Geary at Fifth Avenue, San Francisco

GREENS' EYE HOSPITAL
Consultation, Diagnosis and Treatment of Diseases of the Eye
Bush and Octavia Streets, San Francisco

THE GREER HOME, Inc.
Convalescent Home
6000 Fulton Street, San Francisco

LAS ENCINAS SANITARIUM
Nervous and General Diseases
Las Encinas, Pasadena, California

LIVERMORE SANITARIUM
Nervous and General Diseases
Livermore, California

OAKS SANITARIUM
For Treatment of Tuberculosis
Los Gatos, California

POTTENGER SANATORIUM AND CLINIC
For the Treatment of Tuberculosis
Monrovia, California

PARK SANITARIUM
Mental and Nervous, Alcoholic and Drug Addictions
1500 Page Street, San Francisco, California

SOUTHERN SIERRAS SANATORIUM
Treatment of Tuberculosis
Banning, California

SAINT FRANCIS HOSPITAL
Limited General Hospital
Bush and Hyde Streets, San Francisco

ST. LUKE'S HOSPITAL
Limited General Hospital
27th and Valencia Streets, San Francisco

ST. MARY'S HOSPITAL
General Hospital
2200 Hayes Street, San Francisco

TWIN PINES
Internal Medicine and Neuropsychiatric Cases
Belmont, California

5 — about Cigarettes

Practically untouched by human hands

WE'D like you to see Chesterfields made. We know you'd be impressed by the absolute cleanliness of our factories.

The tobaccos are the best that money can buy.

Expert chemists test for cleanliness and purity all materials used in any way in the manufacture of Chesterfield cigarettes.

The factories are modern throughout. Even the air is changed every 4½ minutes.

When you smoke a Chesterfield you can be sure that there isn't a purer cigarette made.

In a letter to us an eminent scientist says: "Chesterfields are just as pure as the water you drink."

Inspectors examine Chesterfields as they come from the cigarette making machines and throw out any imperfect cigarettes.

Chesterfield

the cigarette that's MILDER
the cigarette that TASTES BETTER

© 1933, Liggett & Myers Tobacco Co.

ALPHABETICAL LIST OF ADVERTISERS

Members of the California Medical Association can aid their Journal and the firms who advertise therein, by coöperation as indicated in the footnote on this page

PAGE

Abbott Laboratories ... 3 Cover
Alexander Sanitarium ... 37
American Red Cross ... 31
Approved Clinical Laboratories ... 12
Associated Optical Co. ... 36

Barry Co., The James H. ... 27
Borden Co., The ... 19
Broemmel's Prescription Pharmacies ... 3
Bush Electric Corporation ... 1

California Lima Bean Growers' Association ... 26
California Sanitarium ... 29
Calso Water Co. ... 30
Canyon Sanitarium ... 35
Certified Laboratory Products ... 37
Chesterfield Cigarettes ... 7
Classified Advertisements ... 10
Cocomalt ... 26
Colfax School for the Tuberculous ... 40
Compton Sanitarium and Las Campanas Hospital ... 30
Cutter Laboratory ... 4 Cover

Dante Sanatorium ... 14
Davis Co., R. B. ... 26
Dewar & Hare Electric Co. ... 3
Diederich Optical Co., Inc. ... 28
Doctors' Business Bureau ... 34
Dry Milk Co., The ... 15

Four Fifty Sutter ... 30
Franklin Hospital ... 22
French Hospital ... 4 Cover

Gallia Laboratories, Inc. ... 31
Golden State Co., Ltd. ... 39
Greens' Eye Hospital ... 2 Cover
Greer Home ... 9
Guth, C. Rodolph, Clinical Laboratories ... 10

Hittenberger, C. H. ... 35
Hospitals and Sanatoriums ... 6
Hynson, Westcott & Dunning, Inc. ... 38

La Loma Feliz ... 10
Las Encinas Sanitarium ... 3
Lilly & Co., Eli ... 32
Livermore Sanitarium ... 22

Maltine Company, The ... 5
Mead Johnson & Co. ... 20
Medical Protective Co., The ... 33
Merck & Co., Inc. ... 18
Mulford Biological Laboratories ... 13

New York Polyclinic Medical School and Hospital ... 9

Oaks Sanitarium, The ... 25
Officers of the California Medical Association ... 2-4
Officers of Miscellaneous Medical Associations ... 6

Parke, Davis & Co. ... 16
Park Sanitarium ... 38
Postgraduate Instruction ... 9
Pottenger Sanatorium ... 17

Ray, Frederick, Collection Specialist ... 28
Riggs Optical Company ... 36

St. Francis Hospital ... 11
San Francisco Bank, The ... 36
San Francisco Polyclinic and Postgraduate School ... 9
Sharp & Dohme ... 13
Shumate's Prescription Pharmacies ... 3
Soiland, Albert (Radiological Clinic) ... 39
Southern Sierras Sanatorium ... 34
Stacey, J. W., Medical Books ... 11
Stuart Oxygen Co. ... 23
St. Luke's Hospital ... 38
St. Mary's Hospital ... 21

Tuberculosis Christmas Seals ... 24
Tulane University of Louisiana Graduate School of Medicine ... 9
Twin Pines ... 11

Walters Surgical Company ... 11
Wilson Laboratories, The ... 29

ON CO-OPERATION WITH ADVERTISERS

California and Western Medicine, the Journal of our Association, in its present form, is made possible in part because of the generous coöperation of firms who believe that its pages can successfully carry a message concerning their products to a desirable group of present and future patrons.

The five thousand and more readers of California and Western Medicine often have occasion to purchase articles advertised in this publication.

Other things being equal, it would seem that reciprocal courtesy and coöperation should lead our members to give preference to those firms who place announcements in our publication.

Coöperation might go even farther than that. When ordering goods from our advertisers, mention California and Western Medicine. By the observance of this rule, a distinct service will be given your Association, its Journal and our advertisers.

A SERVICE AGENCY—FOR READERS

The Journal of the American Medical Association and the A. M. A. Coöperative Medical Advertising Bureau of Chicago maintain a Service Department to answer inquiries from you about pharmaceuticals, surgical instruments and other manufactured products, such as soaps, clothing, automobiles, etc., which you may need in your home, office, sanitarium or hospital.

We invite and urge you to use this Service. It is absolutely *free* to every member of the California and Nevada Associations. The Coöperative Bureau is equipped with catalogues and price lists of manufacturers, and can supply you information by return mail.

Perhaps you want a certain kind of instrument which is not advertised in California and Western Medicine, and do not know where to secure it; or do not know where to obtain some automobile supplies you need. This A. M. A. Service Bureau will give you the information. Whenever possible, the goods will be advertised in our pages; but if they are not, we urge you to write direct to the Coöperative Medical Advertising Bureau, 535 N. Dearborn Street, Chicago, Illinois. California and Western Medicine and the A. M. A. Service Bureau desire to serve *you*.

The New York Polyclinic

MEDICAL SCHOOL AND HOSPITAL

(Organized 1881)

(The Pioneer Post-Graduate Medical Institution in America)

PROCTOLOGY, GASTRO-ENTEROLOGY and ALLIED SUBJECTS

For information address MEDICAL EXECUTIVE OFFICER: 345 W. 50th St., New York City

A COURSE IN OPERATIVE SURGERY

S. F. Polyclinic and Post Graduate School

On January 2, 1934, will begin a Course in Operative Surgery, to run continuously until the first of May. The hours will be arranged so as not to interfere with the practice of physicians in San Francisco and nearby cities and towns.

The course will include a foundation in Anatomy, Surgical Pathology, Diagnosis, and Operative Technic. As supplementary to the work on cadavers, dogs and fresh human material, lectures and demonstrations will be given on living subjects by leading surgeons of San Francisco.

The work will be given on two days a week, from 11 to 1 o'clock. For those living out of town, the time may be changed to one of the days from 11 to 3 o'clock.

Applicants must be graduates of schools approved by the State Board of Medical Examiners.

PARTIAL STAFF OF LECTURERS AND DEMONSTRATORS

Emmet Rixford, M. D., *Emeritus Professor of Surgery, Stanford University.*
H. A. L. Ryfkogel, M. D., *Surgical Chief, San Francisco Polyclinic.*
Asa Collins, M. D., *Chief Surgeon, French Hospital, San Francisco.*
Sterling Bunnell, M. D., *Surgeon, San Francisco Polyclinic.*
Millard R. Ottinger, M. D., *Department of Surgery, San Francisco Polyclinic.*
George Herzog, M. D., *Chief of Department of Gynecology, San Francisco Polyclinic.*
Karl L. Schaupp, M. D., *Gynecologist of the San Francisco Polyclinic.*
Hans von Geldern, M. D., *Gynecologist of the San Francisco Polyclinic.*
William E. Stevens, M. D., *Chief of Department of Urology, San Francisco Polyclinic.*
George W. Hartman, M. D., *Urologist of the San Francisco Polyclinic.*
Frank Rice, M. D., *Chief of Roentgenology, San Francisco Polyclinic.*

FOR FURTHER INFORMATION INQUIRE OF

A. J. REMMEL, M. D., *Director of Operative Surgery, San Francisco Polyclinic and Postgraduate School*

1535 JACKSON STREET SAN FRANCISCO, CALIF.

The Tulane University of Louisiana

Graduate School of Medicine

Approved by the Council on Medical Education of the A. M. A.

POSTGRADUATE instruction offered in all branches of medicine. Courses leading to a higher degree have also been instituted.

For bulletin furnishing detailed information, apply to the . . . .

DEAN

Graduate School of Medicine

1430 Tulane Avenue New Orleans, La.

The GREER HOME, *specializing in*

RECUPERATIVE AND NERVOUS CASES

AN INSTITUTION OF 25 BEDS

Our staff includes a resident physician and competent corps of registered nurses.

Attractive location and recreational surroundings with absence of hospital atmosphere. Inspection invited. Only referred cases of qualified physicians accepted.

The GREER HOME, Inc.

Corner 36th Avenue and Fulton Street
SAN FRANCISCO, CALIFORNIA
Telephone EVERGREEN 9645

CLASSIFIED ADVERTISEMENTS

Rates for these insertions are $4 for fifty words or less; additional words 5 cents each.

COACHING FOR STATE BOARDS—MEDICAL AND dental. Arthur H. White, M. D., Suite 1005, Flood Building, San Francisco.

WANTED, GRADUATE NURSE, TO MANAGE A TWELVE-bed hospital. Address, Box 1200, California and Western Medicine.

OPENING FOR PHYSICIAN AND SURGEON IN PROSperous payroll town in Northern California. Good location. Suite of rooms on corner of brick, fireproof building. Occupied by physician for past three years. Easy terms. Address Box 1210, California and Western Medicine.

A Stable Bile Acid of Exceptional Purity

Decholin

REG. U. S. PAT. OFF.
(Dehydrocholic Acid)

ACCEPTED AMERICAN MEDICAL ASSN. Council on Pharmacy and Chemistry

Through direct action on the liver cells Decholin stimulates hepatic function, and produces effective, rapid choleresis, increasing the bile flow 100% to 200%. Its strong diuretic action proves valuable when heart disease complicates hepatic dysfunction. In cholecystography it hastens appearance of the shadow and aids in the quicker elimination of the dye. Available in tablet form for oral use, and in ampuls (Decholin Sodium) for intravenous administration.

Write for interesting literature

C. RODOLPH GUTH
BIOLOGICS & THERAPEUTIC SPECIALTIES
WILLIAM H. BANKS, M. D., *Medical Director*
PHONE KEARNY 3644
811 Flood Bldg. San Francisco, Calif.
ASSOCIATED WITH
FRATES & LOVOTTI, PROFESSIONAL PHARMACISTS

FOR SALE—MEDICO-DENTAL BUILDING, BERKELEY, California. Two blocks to University; five blocks to center of city; two blocks to trains and street cars. Newly modernized. Excellent condition. Heat, gas, compressed air, refrigeration. Eight suites, 3260 feet rentable area. $25,000. Well financed. White-Pollard-Fred T. Wood, Inc., 1727 Franklin Street, Oakland.

FOR IMMEDIATE SALE — CENTRAL SAN JOAQUIN Valley, established practice in town of 3,000, with thickly settled rural area and modern hospital. Will sell at inventory. Collections up to $1,000 and more per month. Don't answer unless you have $500 in cash. Address, Box 1220, California and Western Medicine.

California Tuberculosis Association Christmas Seal Sale.—Thanksgiving Day marks the opening of the twenty-seventh annual Christmas Seal sale, it was announced by Dr. Robert L. Cunningham, president of the California Tuberculosis Association. "All over the United States these colorful symbols of the gift of health will be mailed to every family. Within a few days, in forty-one different nations of the civilized world, millions of similar seals, each bearing the emblem of the double-barred red cross, will be purchased to aid in the battle against mankind's oldest enemy, tuberculosis."

The statement from Doctor Cunningham continued: "For years the death rate for tuberculosis has been steadily reduced from 204 per 100,000 population in 1910, to 153 in 1920, to 81 in 1932. We may be thankful that this rate of decrease has not lessened over the past few years because of the added burden of increased malnutrition and infection from this disease. If we are able to counteract the present increased morbidity from tuberculosis through the recovery of the complete program of tuberculosis control, we may expect the decrease in the death rate to continue. The fatal termination of the disease among the large number of our people, newly infected during the depression, may still be prevented by the expansion of case finding and early diagnosis work.

"In some parts of the world, and in some localities in our country, the sad result of the slackening of anti-tuberculosis work during this time when there is a greater need has already been felt. Years of costly effort will be necessary to regain this lost ground. We must do all in our power to prevent such failure in our home communities. Only through adequate support of the organizations engaged in the battle against tuberculosis can this be prevented from happening here.

"Within a few days after Thanksgiving nearly everyone in the state will receive his quota of Christmas Seals. It is hoped that all those whose financial position makes it possible will order more seals, and that those who are not yet on the list of donors will order seals through their local tuberculosis association."

La Loma Feliz

(HAPPY HILLSIDE)

Residential School for children handicapped by heart disease, asthma and kindred conditions.

Offers consistent medical attention and regular schooling. No tuberculous or mentally retarded children. Situated on a ranch in the foothills near Santa Barbara. Dry equable climate by actual weather bureau observations.

P. O. Box 585
Telephone No. 22349

INA M. RICHTER, M. D.
Director

Mission Canyon Road
Santa Barbara, California

BOOK REVIEWS

List of Books Received

BOOKS RECEIVED

A Textbook of Medicine. By One Hundred and Forty-One American Authors. Edited by Russell L. Cecil, A. B., M. D., Sc. D., Professor of Clinical Medicine, Cornell University Medical College; Associate Attending Physician New York Hospital, New York City. And Associate Editor for Diseases of the Nervous System, Foster Kennedy, M. D., F. R. S. E., Professor of Neurology, Cornell University Medical College; Director, Department of Neurology, Bellevue Hospital, New York City. Third edition, revised and entirely reset. Cloth. Pp. 1664, illustrated. Price, $9 net. Philadelphia and London: W. B. Saunders Company, 1933.

Industrial Health Service. By Leverett Dale Bristol, M. D., Dr. P. H., Health Director, American Telephone and Telegraph Company, New York; Formerly Commissioner of Health of the State of Maine and Professor of Preventive Medicine and Public Health, University of Minnesota. Cloth. Pp. 170. Price, $2. Philadelphia: Lea & Febiger, 1933.

Pathogenic Microörganisms. A Practical Manual for Students, Physicians, and Health Officers. By William Hallock Park, M. D., Professor of Bacteriology and Hygiene, University and Bellevue Hospital Medical College and Director of the Bureau of Laboratories of the Department of Health, New York City, and Anna Wessels Williams, M. D., Assistant Director of the Bureau of Laboratories of the Department of Health, New York City. Tenth edition, enlarged and thoroughly revised. Cloth. Pp. 867, with 215 engravings and 11 full-page plates. Price, $7. Philadelphia: Lea & Febiger, 1933.

Metabolic Diseases and Their Treatment. By Erich Grafe, Professor of Medicine and Director of the Clinic of

(Continued on Next Page)

BOOKS FOR CHRISTMAS

Harris: California's Medical Story	$3.50
—Limited Edition	10.00
Clendening: Behind the Doctor	3.75
de Kruif: Men Against Death	3.50
Haggard: Devils, Drugs and Doctors	1.00
Major: Classic Description of Disease	4.50
Pusey: History and Epidemiology of Syphilis	2.00
Sigerist: The Great Doctors	4.00

BOOK ORDERS express real thoughtfulness.
We shall be glad to issue them for any amount.

J. W. STACEY, INC.
Medical and Scientific Books
GArfield 0838
236-238 Flood Bldg. San Francisco

SAINT FRANCIS HOSPITAL
AND
SCHOOL OF NURSING
A General Hospital With Accommodations for Three Hundred Patients
DIRECTORS
JOHN GALLWEY, M. D.
W. B. COFFEY, M. D.
THOS. E. SHUMATE, M. D.
C. R. BRICCA, M. D.
W. W. WYMORE, M. D.
JOHN H. GRAVES, M. D.
Superintendent, V. W. OLNEY
J. H. O'CONNOR, M. D.
R. K. SMITH, M. D.
H. E. MANWARING
W. H. LINFORTH
Address Communications
SAINT FRANCIS HOSPITAL
Bush and Hyde Streets *Telephone* PROSPECT 7600 San Francisco

Christmas Gifts — *for Doctor or Nurse*
WALTERS SURGICAL COMPANY
521 Sutter Street SAN FRANCISCO Telephone GArfield 7995

TWIN PINES SANITARIUM
BELMONT, CALIFORNIA
INTERNAL MEDICINE AND SELECTED NEUROPSYCHIATRIC CASES
CLARE MEHRTENS, *Director* WILL REBEC, M. D., *Medical Director*
Number of Patients Limited
Accredited to AMERICAN MEDICAL ASSOCIATION
Telephone BELMONT 111

APPROVED CLINICAL PATHOLOGISTS

American Medical Association Essentials for An Approved Clinical Pathologist

An approved clinical pathologist should be a licensed graduate of medicine. He shall have specialized in clinical pathology, bacteriology, pathology, chemistry, and other allied subjects for at least three years, and he should be reasonably familiar with the manifestations of disease in the body. The director of a clinical laboratory shall be on full time or have definite hours of attendance, devoting the major part of his time to this specialty. A clinical laboratory is an institution organized for the practical application of the fundamental sciences by the use of specialized apparatus, equipment and methods, for the purpose of ascertaining the presence, nature, source, and progress of disease in the human body.

The following Clinical Pathologists directing private laboratories in California are approved by the Council on Medical Education and Hospitals of the American Medical Association:

Clinical Laboratory of Drs. W. V. Brem, A. H. Zeiler, Roy W. Hammack and G. D. Maner, 657 So. Westlake Avenue, Los Angeles, California.

Zera E. Bolin, M. D., 490 Post Street, San Francisco, California.

These laboratories use standard methods and are fully equipped to make all clinical examinations of recognized value in: **Tissue Pathology, Bacteriology, Hematology, Serology, Bio-Chemistry, Kolmer Wassermanns, Kahn test, Medico-legal, Basal metabolism, Blood chemistry, Hormone Test for Pregnancy, Parasitology, Cardiology, Autogenous vaccines, etc.**

Mailing containers sent on request. Special delivery postage insures prompt, accurate service.

BOOKS RECEIVED

(Continued from Preceding Page)

Medicine and Neurology at the University of Würzburg, Germany. Translated by Margaret Galt Boise, under the Supervision of Eugene F. DuBois, M. D., Medical Director, Russell Sage Institute of Pathology; Professor of Medicine, Cornell University Medical College, New York, and Henry B. Richardson, M. D., Associate Professor of Medicine, Cornell University Medical College, New York. Cloth. Pp. 551, illustrated with 37 engravings. Price, $6.50 net. Philadelphia: Lea & Febiger, 1933.

The Rockefeller Foundation Annual Report, 1932. Paper. Pp. 455. New York: The Rockefeller Foundation, 1933.

Annual Report of the Board of Regents of the Smithsonian Institution. Showing the Operations, Expenditures, and Condition of the Institution for the Year Ending June 30, 1932. Paper. Pp. 497. Price, 70 cents. Washington: United States Government Printing Office, 1933.

BOOK REVIEWS

Practical Obstetrics for Students and Practitioners. By P. Brooke Bland, assisted by Thaddeus L. Montgomery. Pp. 730. Illustrated. Philadelphia: F. A. Davis Company. 1932.

According to the author's preface, this book was compiled with the object of having it fill an important place between the large work and the small manual. On the whole, it is nicely gotten up, though the arrangement of chapters is a little strange in that many of the serious complications of pregnancy are taken up before the more fundamental consideration of normal labor and its mechanism. Emphasis is placed on the practical aspects of obstetrics, often at the expense of clear elucidation of the fundamental principles and knowledge upon which they are based. Statements are made in dogmatic style in the interest of brevity. Although what is said is in accord with the best modern practice, explanation and qualification in many instances could have been added with profit. The book tells the "what" and the "how," but tends to leave out the "why."

Effort has been made to tabulate whenever possible. Many pages are devoted to differential diagnosis, arranged in tabular form in parallel columns. As a comprehensive notebook for students, or a source of refreshment for lecturers, this arrangement is ideal, but it may be doubted whether students absorb well that which is presented in bare factual form.

A long list of omissions might be made. The points left out are relatively minor, particularly from a practical standpoint. A few acts of commission might be criticized. For instance, patients with tuberculosis are categorically forbidden pregnancy. Such a stand requires discussion. No distinction is made between active and arrested cases; there is no consideration of the interval elapsing between active tuberculosis and possible pregnancy. The point is that the young doctor, on the basis of such brief, dogmatic exposition, might become responsible for much unnecessary unhappiness.

On the other hand, there are a number of commendable features. A chapter on obstetrical jurisprudence is well worth any doctor's attention. Abortions are considered in an interesting and enlightening fashion. Illustrations are in goodly number and serve well to elucidate the text. The author's style is clear and concise. What he writes is well expressed. This seems an important feature, even in a textbook on more or less technical matters. It makes the book readable, and easily understood. D. G. M.

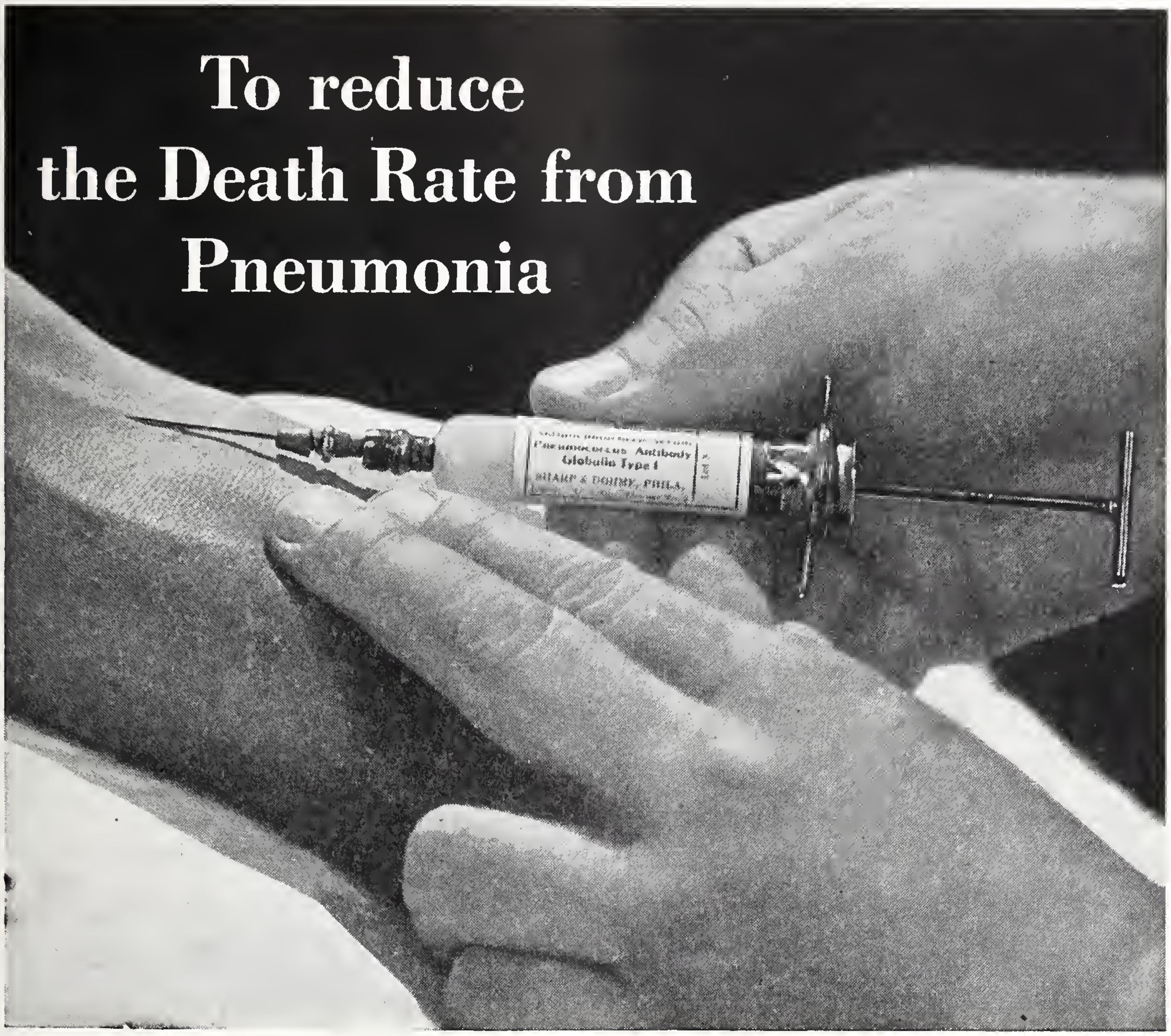
Operative Surgery. By Warren Stone Bickam and Calvin Mason Smyth, Jr. Vol. VII. Pp. 849. Illustrated. Philadelphia and London: W. B. Saunders Company. 1933. Price, $10.

Eight years have elapsed since the publication of the first six volumes of this work. In this volume the author (Calvin Mason Smyth, Jr.) has brought up to date the previous six volumes by the addition to each section of those operative procedures which have become established as useful ones.

The chapters dealing with operations upon the chest and the colon contain the greatest amount of new material. In the former, no mention is made of the lobectomy technique described by Brunn, which seems to the reviewer rather unfortunate, as Brunn's procedure has proved quite safe and has many advantages over the method described in this volume.

In the descriptions of the various techniques for the induction of spinal analgesia, the use of pantocain (Winthrop & Company) is not mentioned. It is the reviewer's

(Continued on Page 14)



To reduce the Death Rate from Pneumonia

A STEP FORWARD in reducing the death rate from pneumonia has been found in concentrated and standardized Pneumococcus Antibody Globulin Type I Mulford, prepared according to the method of Felton.

The use of this serum has shown beneficial effect. Definite improvement usually appears within thirty hours after antibody administration and the average duration of illness is shorter than that of untreated patients. Best results are obtained when administered early in the disease.

Therefore, its *concentration* has important therapeutic significance as tests show a protective value ten or more times that of the serum from which it was made. Its *standardization* means certainty in dosage and uniformity of therapeutic expectation.

Serum sickness is minimized as the refining processes remove most of the serum proteins; the allergic type of reaction is fortunately rare.

Further information will be supplied on request.

ACCEPTED
AMERICAN MEDICAL ASSN
Council on Pharmacy and Chemistry

MULFORD BIOLOGICAL LABORATORIES

Sharp & Dohme

PHILADELPHIA BALTIMORE MONTREAL

Pneumococcus Antibody Globulin Type I Mulford

DANTE SANATORIUM
Known for the High Standard of Cuisine and Service
Broadway and Van Ness Avenue
SAN FRANCISCO CALIFORNIA
Edward A. Trenkle, *Managing Director* *Telephone* GRaystone 1200

BOOK REVIEWS

(Continued from Page 12)

opinion that this drug has a distinct advantage over any previously used because of the duration of analgesia obtained.

This volume contains a general index to the complete set, and is a worthy addition to the preceding excellent volumes; it should have its place in every surgeon's library. The chapter dealing with the operations for hernia of the intestinal tract is particularly good, and the illustrations of the various techniques most excellent.

The volume contains considerable material with which the well-informed surgeon has already become acquainted. Nevertheless it will prove to be of exceptional value as a handy reference to refresh one in the various steps of operative technique. To the busy surgeon who finds it difficult to cover the current literature, this volume will be most acceptable, as only procedures of accepted merit are described, and in most instances each particular specialty is most adequately covered.

The reviewer feels the surgical profession should be extremely grateful and proud of this volume, which must represent an exceptional energy on the part of its author, who was not satisfied until he had seen his work well done. H. W. S.

The Operative Story of Cleft Palate. By George Morris Dorrance. Illustrated. Philadelphia and London: W. B. Saunders Company. 1933.

This extremely interesting and worthwhile book on the operative treatment of cleft palate is based on data derived partly from the general literature of the subject and partly from the author's own material.

The first two chapters deal with the general history and development of cleft palate surgery, beginning with the first contribution to this subject, in the book of Celsus, pages 14 to 37. These chapters contain numerous pictures and plates illustrative both of the early and the modern instruments used in this type of work. Thereafter the author gives thorough historical accounts of the so-called "Langenbeck" operation, the "Krimer-Lane" procedure—"Osteal Uranoplasty"—and the "Brophy" technique of uranoplasty by compression. The author treats each of these subjects separately and describes the various operations as they are performed by surgeons in different parts of the world, considering, in each instance, the bad as well as the good points of the operative technique. A very comprehensive description is given of the method of palatal repair by utilization of nasal, buccal and extra-oral tissue. And fairly complete accounts are set forth of the methods in use in this country and abroad so that the reader can form for himself a satisfactory composite picture of the surgical procedure. The author also describes the procedure wherein both intra- and extra-oral tissue are used at one operation, and surveys thoroughly the various methods used since Passavant, in 1862, suggested that the nasal intonation was due to the failure of the soft palate to come into contact with the pharyngeal wall after lengthening of the velum.

Planned with a view to cover the subject thoroughly, this book describes in detail the development, anatomy, physiology and etiology of cleft palate. Nor does it treat of palatal clefts alone; for in several chapters on the treatment of lip, jaw, and palate splits we are told how these defects have been and how they should be handled.

In concluding, Doctor Dorrance summarizes the contents of the book and adds a review of his own push back operation. This operation, whether viewed from the standpoint of physiology or anatomy, he believes to be the correct one in the treatment of cleft palate, if the palate falls short of doing its part in the pharyngopalateal sphincter closure. G. B. O'C.

The History and Epidemiology of Syphilis. By William Allen Pusey. Pp. 113. Illustrated. Springfield: Charles C. Thomas. 1933. Price, $2.

The author is of those who believe syphilis to be a gift from America to Europe, a gift which has added much to the varied life of the latter continent. And let it further be known that the inestimable benefit to the world of an enlarged geographic sense and the addition of this disease to our already extensive list of maladies are the two earliest acquisitions we received from the newly discovered Americas. These two gifts, the wider world view and the spirochete, both antedate by a considerable interval the other notable American gifts from the New World to the Old of tobacco, quinin, and the humble potato.

Doctor Pusey graphically describes the advent of this truculent immigrant, and how luxuriantly it flourished during its first riotous years to settle down later into a steadier, less ostentatious life, but always remaining one of our greatest plagues.

(Continued on Page 17)

DRYCO POLICY AND MEDICAL ETHICS

An Open Letter to the Medical Profession

FOR many years we have been telling the story of Dryco, and later that of Irradiated Dryco, to the medical profession. Physicians have shown a gratifying interest in its scientific background and its practical success.

IRRADIATED Dryco has always been advertised and marketed under a strictly ethical policy. We have not considered it either necessary or becoming to stress this fact in medical journal advertising, since it has always been maintained and could be attested to at any time or place.

WE HAVE solicited your consideration of Dryco as an outstanding food for babies, not because we do not advertise to the laity but because Dryco is a valuable help in feeding infants who have for one reason or another been deprived of breast milk—the oldest and best of all baby foods.

WE ASK your consideration of Dryco because of its years of successful clinical history and its constant scientific progress —not *merely* because we confine our advertising exclusively to the medical profession. We believe physicians place a higher value upon the usefulness and dependability of a product than upon any advertising policy.

THEREFORE, we base and have always based our medical journal advertising on scientific facts and clinical findings on Irradiated Dryco as a food for infants.

The DRY MILK COMPANY, Inc.

205 EAST 42ND STREET, DEPT. C.W., NEW YORK, N. Y.

NRA MEMBER U.S. WE DO OUR PART

THE CHILD AND THE ELEPHANT HAVE THIS IN COMMON

THE ELEPHANT, they say, never forgets.

While it's hardly accurate to say that a child *never* forgets, he is very likely to cling to the memory of an unpleasant experience—of a dose of distasteful medicine, for instance. And he's likely, from then on, to turn bitter eyes toward the doctor who prescribed that medicine.

Today, Parke-Davis Haliver Oil products are saving many a doctor from such resentful looks. Because of its great potency, Haliver Oil can be given in friendly drops or tiny tasteless capsules. These small doses do the work of teaspoonfuls of cod-liver oil.

And, of course, Haliver Oil is proving just as helpful in the treatment of adults. No doctor need be told how child-like a full-grown man or woman can act in the face of distasteful medicine. Haliver Oil makes it easier to cope with them, too. In fact, Parke-Davis Haliver Oil products have simplified and solved the troublesome question of how to administer vitamins A and D scientifically and at the same time pleasantly.

Parke-Davis Haliver Oil is supplied in two ways:* either with Viosterol or Plain. Practically every druggist in the United States and Canada carries these products in stock.

* HALIVER OIL WITH VIOSTEROL-250 D
Containing 32,000 vitamin A units (U. S. P. X.) and 3,333 vitamin D units (Steenbock) per gram.

HALIVER OIL PLAIN
32,000 vitamin A units (U. S. P. X.) and 200 vitamin D units (Steenbock) per gram.

PARKE, DAVIS & COMPANY

The World's Largest Makers of Pharmaceutical and Biological Products

POTTENGER SANATORIUM AND CLINIC

FOR DISEASES OF THE CHEST MONROVIA, CALIFORNIA

Twenty-eight years' experience in meeting the problems of the tuberculous patient.

Located in the foothills of the Sierra Madre mountains, at an elevation of 1000 feet. Sixteen miles east of Los Angeles, on the main line of the Santa Fe. Reached also by the Pacific Electric. Equipped for the scientific treatment of tuberculosis and other diseases of the chest. Beautiful surroundings. Close personal attention. Excellent food.

A clinic for the study and diagnosis of all diseases of the chest, including asthma, lung abscess and bronchiectasis is maintained in connection with the institution.

Weekly rates from $25 up, including medical attention, medicines (except expensive remedies), and general nursing. Extra charge for operative measures except pneumothorax.

Los Angeles Office
WILSHIRE MEDICAL BUILDING
1930 Wilshire Boulevard

For particulars address:
POTTENGER SANATORIUM
MONROVIA, CALIFORNIA

BOOK REVIEWS

(Continued from Page 14)

The route traveled by this new arrival is also interesting, and is interestingly told. Sailors brought it across the level seas and, on reaching the land, soldiers spread it; and ever since it has especially adhered to Neptune and Mars and to that other saucy wanderer, Venus vulvivaga.

If the advent of syphilis into Europe was notable as accompanying one of the greatest discoveries, and the symptoms evoked in the human the most varied and picturesque pertaining to any disease, the efforts of man to shake himself loose from his tormentor, whether fruitful or fruitless, constitute the liveliest chapter in the history of therapeutics.

These defense reactions resolve themselves into medication and prophylaxis. At first, prophylaxis was exercised in the real, old Aryan way of excluding the diseased individual from the city on pain of death, which was frequently equivalent in itself to a death sentence. This rude method was no match, however, for the most insidious of all diseases, and the enemy is so persistent and its effects so devastating that the ingenuity of the defense has been constantly stimulated, resulting in some of the greatest advances achieved by our art.

And those who read this small, well-written work, will find therein the intricate story of this disease clearly and entertainingly told. D. W. M.

The Duodenum. By Edward L. Kellogg. Pp. 855. Illustrated. New York: Paul E. Hoeber. 1933. Price, $10.

This monograph describes the structure and functions of the duodenum, together with the medical and surgical diseases to which it is subject, and their treatment. The material is presented in the light of the newer physiological and biochemical developments, and is based upon well-grounded pathological entities as well. It is an exceptionally complete, excellently written book, and most of the conditions discussed are elucidated by case reports. It is beautifully illustrated; and the references supplied for collateral reading purposes are quite numerous and comprehensive.

In regard to chronic duodenal ileus, it is noteworthy that the author's views, treatment and results are far in advance of the routine practiced today.

As it covers adequately every aspect of the known diseases with which the duodenum is afflicted, this book would be a valuable asset to any gastro-enterologist or abdominal surgeon. L. B.

BOARD OF MEDICAL EXAMINERS

(Continued from Text Page 432)

Samuel Rodman Irvine, Beverly Hills, Harvard University Medical School, Massachusetts.
Carl Ewald Kahlstrom, Los Angeles, College of Medical Evangelists.
Maurice Emanuel Leonard, San Francisco, McGill University Faculty of Medicine, Canada.
Edward Irving Lipsius, Fresno, Temple University School of Medicine, Pennsylvania.
Louis Ernest Lombardi, San Francisco, St. Louis University School of Medicine, Missouri.
William Henry McGehee, Fresno, Vanderbilt University School of Medicine, Tennessee.
John Paul McKenney, San Francisco, Stanford University School of Medicine.
Thomas Taylor Mitchell, Brawley, College of Medical Evangelists.
Ferrall Harmon Moore, San Francisco, University of Nebraska College of Medicine.
John Baptist Plastina, Spokane, Wash., Rush Medical College.
Robert Purcell Rea, Annapolis, Rush Medical College.
Arthur Lee Richardson, Rosemead, University of Michigan Medical School.
Charles Rubenstein, San Francisco, University of Charkov, Russia.
Maurice Zolmen Silton, Los Angeles, Rush Medical College.
Gus Spitalny, Bayler University College of Medicine, Texas.
Thomas Hunter Sternberg (M. B.), Los Angeles, Northwestern University Medical School, Illinois.
Winton Franklin Swengel, Los Angeles, Rush Medical College.
Elwin Wilton Thomas, Redlands, College of Medical Evangelists.
Peter A. Toben, Venice, Temple University School of Medicine, Pennsylvania.
Elie Louis Touriel, Los Angeles, St. Louis University School of Medicine, Missouri.
Gustave Ulloth, Bakersfield, College of Medical Evangelists.
Franklin Judson Underwood, San Francisco, Harvard University Medical School.
Ralph James Weseman, Los Angeles, College of Medical Evangelists.
George Otis Whitecotton, Oakland, Stanford University School of Medicine.

(Continued on Next Page)

NEUROSYPHILIS

Clinical reports indicate that forty to fifty per cent of cases of early paresis show symptomatic improvement under Tryparsamide therapy. The treatment does not disrupt the patient's daily routine of life and is available through the services of his personal physician. The cost of Tryparsamide has been reduced. The present price to physicians is, 1 Gm. ampul 40 cents; 2 Gm. ampul 55 cents; 3 Gm. ampul 70 cents. Clinical reports and treatment methods will be furnished on request.

Tryparsamide

Mfg. by arrangement with The Rockefeller Institute for Medical Research — Patentee and Registrant

MERCK & CO. INC.
Rahway, N. J.

BOARD OF MEDICAL EXAMINERS

(Continued from Preceding Page)

Malcolmn N. Wilmes, San Francisco, Georgetown University School of Medicine, D. C.
Leon Zacharias Wolpe, Los Angeles, Rush Medical College.
Robert Langherne Worthington, San Diego, McGill University Faculty of Medicine, Canada.

* * *

News Items

"Charged with treating the sick and afflicted without a license, Joseph L. Wall was arrested and lodged in the city jail last night by J. W. Davidson, special agent of the California Board of Medical Examiners. . . . According to Davidson, Wall had been carrying on his practice since early last spring and had treated some 400-odd patients. Wall, according to the special agent, is a former railroad brakeman, whose only education in the profession he has been following recently was a correspondence course with a Chicago chiropractic school, to which he paid $250 for a diploma. Davidson said Wall received a 180-day suspended sentence on the same charge last February in Oroville." (Chico *Record*, November 10, 1933.) (Previous entry, June, 1933.)

"Dr. E. C. Epperson of Oroville is held to be eligible for the position of health officer of Butte County in an opinion given by Attorney General U. S. Webb. The law prescribes a health officer shall be a graduate of a medical college in good standing. Doctor Epperson was graduated from the College of Osteopathic Physicians and Surgeons in Los Angeles in 1915. The Attorney General's opinion, however, points out that at that time, which was prior to the adoption of the Osteopathic Board Act in 1922, the Los Angeles College was under the jurisdiction of the State Board of Medical Examiners and offered a course of study the same as any medical college. Doctor Epperson took the usual medical examination and received a certificate as a physician and surgeon." (Sacramento *Bee*, October 30, 1933.)

"Dr. Howard Morrow, for the last thirty-five years prominent in the San Francisco medical profession and former national president of the American Dermatological Association, yesterday was elected head of the State Board of Health. Doctor Morrow succeeds Dr. John M. Graves, president of the board for the last eighteen months, who resigned yesterday because of pressure of private business. . . . " (San Francisco *Examiner*, November 1, 1933.)

"Withdrawing his not guilty plea at the time set for his jury trial, Dr. A. Castillo of San Bernardino yesterday entered a plea of guilty to the charge of manslaughter in Superior Judge F. A. Leonard's court. The physician applied for probation. . . . 'This plea of guilty to the manslaughter charge,' Attorney R. E. Hodge stated in the courtroom, 'must not be interpreted as an admission that Doctor Castillo performed an illegal operation, but that the doctor admits he was negligent in the treatment of his patient, this negligence resulting in the death of Mrs. Mary Hernandez.' . . . " (San Bernardino *Telegram*, October 31, 1933.) The records of the Board of Medical Examiners show the correct name of this licentiate to be Antonio del Castillo.

"Two doctors were in jail yesterday. Dr. G. H. Parchen, chiropractor, is charged with having performed an illegal operation on Peggy Kirkpatrick, now at the county hospital. Dr. John Logan Piburn, medical man, faces a morals charge involving a young girl." (San Diego *Union*, October 21, 1933.)

(Continued on Page 21)

The sewing circle sage can't take *your* place!

WHEN you prescribe Evaporated Milk for infant feeding, the mother needs *your* advice to guide her choice of brand and quality. Lacking your guidance, she may make her selection of milk upon the advice of a sewing circle sage.

You know what standards of quality you desire in the Evaporated Milk you prescribe. But the kind lady in the sewing circle may not know what your standards are, and she may not recommend the brand you had in mind.

The physician will find that all of the Evaporated Milks produced by The Borden Company meet his requirements as to quality, purity and freshness. Careful selection of raw milk and rigid safeguards throughout the process of manufacture guarantee the quality of every Borden brand . . . Borden's Evaporated Milk . . . Pearl . . . Maricopa . . . Oregon . . . St. Charles . . . Silver Cow. All these Borden brands are accepted by the American Medical Association Committee on Foods.

Write for compact, simple infant feeding formulary and scientific literature. Address The Borden Company, Dept. 328, 350 Madison Avenue, New York, N. Y.

The Borden Company was the first to submit evaporated milk for acceptance by the Committee on Foods of the American Medical Association. Borden's was the first evaporated milk to receive the seal of acceptance of this Committee.

Borden's

NRA MEMBER U.S. WE DO OUR PART

EVAPORATED MILK

Lest we forget Dextri-Maltose the carbohydrate of choice for over twenty years—never advertised to the public

No. 1 Maltose 51%. Dextrins 42%. $NaCl$ 2%. H_2O 5%.
No. 2 Maltose 52% Dextrins 43%. H_2O 5%.
No. 3 Maltose 51% Dextrins 41% KCO_2 3%. H_2O 5%

"The dextrin-maltose preparations possess certain advantages. When they are added to cow's milk mixtures, we have a combination of three forms of carbohydrates, lactose, dextrin and maltose, all having different reactions in the intestinal tract and different absorption rates. Because of the relatively slower conversion of dextrins to maltose and then to dextrose, fermentative processes are less likely to develop. Those preparations containing relatively more maltose are more laxative than those containing a higher percentage of dextrin (unless alkali salts such as potassium salts are added). It is common experience clinically that larger amounts of dextrin-maltose preparations may be fed as compared with the simple sugars. Obviously, when there is a lessened sugar tolerance such as occurs in many digestive disturbances, dextrin-maltose compounds may be used to advantage." (Queries and Minor Notes, J. A. M. A., 88:266)

Please enclose professional card when requesting samples of Mead Johnson products to cooperate in preventing their reaching unauthorized persons.

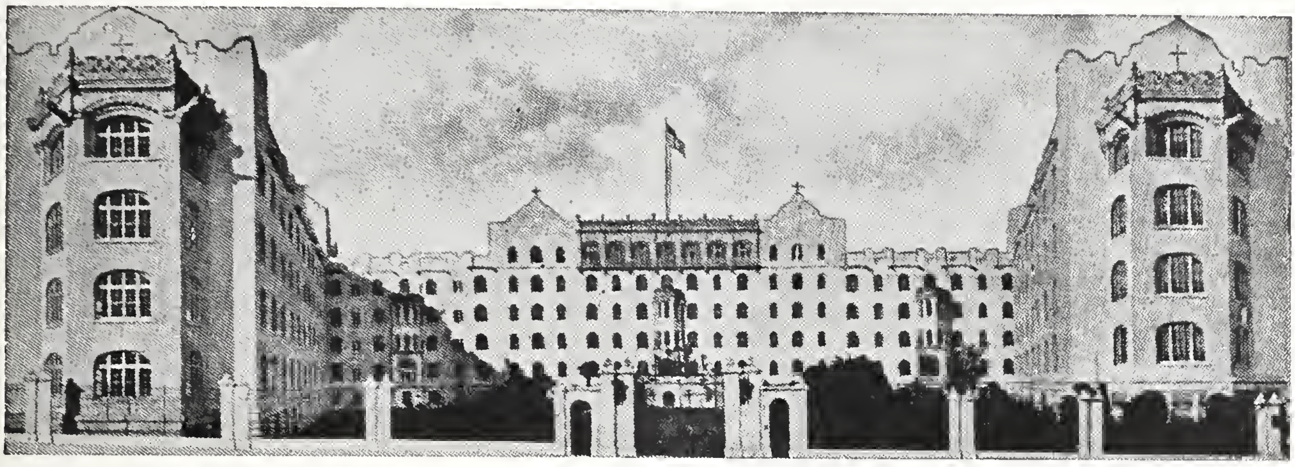
Mead Johnson & Company, Evansville, Ind., U.S.A.

ST. MARY'S HOSPITAL

2200 Hayes Street
San Francisco

Conducted by Sisters of Mercy

Accredited by the American Medical Association. Open to all members of the California Medical Association. Accredited School of Nursing and Out-Patient Department.



PROFESSIONAL STAFF

Surgery
T. Edward Bailly, Ph.D., F.A.C.S., M.D.
Guido Caglieri, B.Sc., F.R.C.S., F.A.C.S., M.D.
Edward Topham, F.A.C.S., M.D.
James Eaves, M.D.
W. W. Fritschen, A. B., M. D., F. A. C. S.
Hubert R. Arnold, F.A.C.S., M.D.
Edmund Butler, F.A.C.S., M.D.
Rodney A. Yoell, M.D.
T. T. Shea, M.D.

Urology
Charles P. Mathe, F.A.C.S., M.D.
George F. Oviedo, M.D.
Thomas E. Gibson, F.A.C.S., M.D.

Medicine
J. Haderle, M.D.
H. V. Hoffman, M.D.
Stephen Cleary, M.D.
A. Diepenbrock, M.D.
J. H. D. Roger, M.D.
Thomas J. Lennon, M.D.
James M. Sullivan, M.D.

Heart
Harry Spiro, M.D.

Obstetrics
Philip H. Arnot, M.D.
Charles C. Mohun, M.D.

Eye, Ear, Nose and Throat
F. J. S. Conlan, F.A.C.S., M.D.
L. A. Smith, M.D.
J. J. Kingwell, M.D.
T. Stanley Burns, M.D.

Orthopedics
Thomas J. Nolan, M.D.
J. J. Loutzenheiser, M.D.

Pediatrics
Randolph G. Flood, F.A.A.P., M.D.

Neurological Surgery
Edmund J. Morrissey, M.D.

Thoracic Surgery
William B. Faulkner, Jr., M.D.

Gastroenterology
Edward Hanlon, M.D.
Frank A. Kinslow, M.D.

Neurology
Milton B. Lennon, M.D.

Dermatology
H. Morrow, M.D.
Harry E. Alderson, M.D.

Pathology
Elmer W. Smith, M.D.

Radium Therapy
Monica Donovan, M.D.

Dentistry
Thomas Morris, D.D.S.
Francis L. Meagher, D.D.S.

BOARD OF MEDICAL EXAMINERS

(Continued from Page 18)

"Declaring that the 'curse of narcotic addiction' is one of the worst menaces confronting the Government," United States District Judge McCormick yesterday refused leniency in the case of Dr. Frank Andruss Northrup, Santa Monica physician, found guilty on ten counts of an indictment accusing him of trafficking in narcotics. On being informed by Assistant United States Attorney Thomas that the State Board of Medical Examiners had Doctor Northrup under investigation on the charge of violating the Medical Practice Act, Judge McCormick said he would grant probation on the federal prison sentence, but that Doctor Northrup would have to go to jail for a period as immediate punishment. On counts 5 and 10 the court sentenced him to serve concurrent terms of six months each in the Riverside County jail. On the remaining counts Judge McCormick sentenced him to concurrent terms of five years each in a federal prison and granted him probation for five years. The State Board's investigation of Doctor Northrup, Prosecutor Thomas said, halted when it was informed of the federal indictment. Judge McCormick said he presumed this investigation will proceed to its ultimate conclusion and that if history is a criterion, the State Board will further punish the physician." (Los Angeles *Times,* October 31, 1933.)

"'Dr.' Frederick Woelfli, who was convicted under the State Medical Practice Act, after an investigation by District Attorney Wallace Rutherford revealed he was administering to the ills of Pope Valley ranchers without medical education or a license, today was to go to trial before a jury in court here on charges of performing an illegal operation. The jail sentence of 125 days given Woelfli when he pleaded guilty to the charge of posing as a physician, will expire on November 5' . . . " (Press dispatch, dated Napa, October 24, printed in the Oakland *Tribune,* October 24, 1933.)

On October 26, 1933, in the Municipal Court of Los Angeles, complaint was filed charging John W. Melville with violation of the Medical Practice Act; however, the report relates that he departed before he could be apprehended.

Reports relate that Louise Briggs pleaded guilty in the Justice Court of Laguna Beach, October 27, 1933, to a charge of violation of the Medical Practice Act and was sentenced to serve six months in the county jail, sentence being suspended for six months on condition she no further violate the Medical Practice Act.

The Vinegar of the Four Thieves.—Writing on this subject, Charles H. LaWall, dean of the Philadelphia College of Pharmacy and Science, and author of "Four Thousand Years of Pharmacy," presents the following:

One of the eighteenth century glass-stoppered shelf bottles in the ancient pharmacy of E. R. Squibb & Sons, exhibited this summer at the Century of Progress Exposition in Chicago, is labeled *Acetum Bezoardicum.*

Now this name is unintelligible and untranslatable to the average member of either the medical or the pharmaceutical profession.

If one who is curious takes the trouble to look up the meaning of the word "bezoar" he will find that it applies to a concretion or calculus found in the intestinal tract of certain kinds of animals, particularly the herbiverous, and that it was once highly esteemed for its antidotal virtues.

(Continued on Page 25)

FRANKLIN HOSPITAL 14th and Noe Streets

BEAUTIFULLY located in a scenic park—Rooms large and sunny—Fine Cuisine—Unsurpassed Operating, X-Ray and Maternity Departments.

⁂

Training School for Nurses

⁂

For further information
Address
FRANKLIN HOSPITAL
San Francisco

LIVERMORE SANITARIUM

The Hydropathic Department devoted to the treatment of general diseases excluding surgical and acute infectious cases. Special attention given functional and organic nervous diseases. A well equipped clinical laboratory and modern X-ray Department are in use for diagnosis.

The Cottage Department (for mental patients) has its own facilities for hydropathic and other treatments. It consists of small cottages with homelike surroundings, permitting the segregation of patients in accordance with the type of psychosis. Also bungalows for individual patients, offering the highest class of accommodation with privacy and comfort.

GENERAL FEATURES

1. Climatic advantages not excelled in United States. Beautiful grounds and attractive surrounding country.
2. Indoor and outdoor gymnastics under the charge of an athletic director. An excellent Occupational Department.
3. A resident medical staff. A large and well trained nursing staff so that each patient is given careful individual attention.

Information and circulars upon request
Address: CLIFFORD W. MACK, M. D.
Medical Director
LIVERMORE, CALIFORNIA
Telephone 7-J

CITY OFFICES:

SAN FRANCISCO
450 Sutter Street
DAvenport 3523

OAKLAND
1624 Franklin Street
GLencourt 5989

STUART MEDICAL GASES

Announcing the NEW

Hi-Pure
Nitrous Oxide

99.5% PURE

Our laboratory research extending over a three year period has resulted in a new method of reprocessing nitrous oxide, attaining a purity in excess of 99.5%. This is accomplished by removing the free nitrogen often present up to 5%.

It is believed this will permit using higher percentages of oxygen in nitrous oxide-oxygen anaesthesia.

We are now prepared to furnish this reprocessed 99.5% pure nitrous oxide at a price only slightly higher than that prevailing on our standard product which conforms in all particulars to U. S. P. standards.

We invite inquiries and comments.

We will be glad to show you how to test your Nitrous Oxide for its free nitrogen content

STUART OXYGEN CO.

2857 Ettie Street
OAKLAND
HIgate 0345

211 Bay Street
SAN FRANCISCO
DOuglas 5138

723 East Ninth Street
LOS ANGELES
VAndyke 8484

"Thanks for Health"

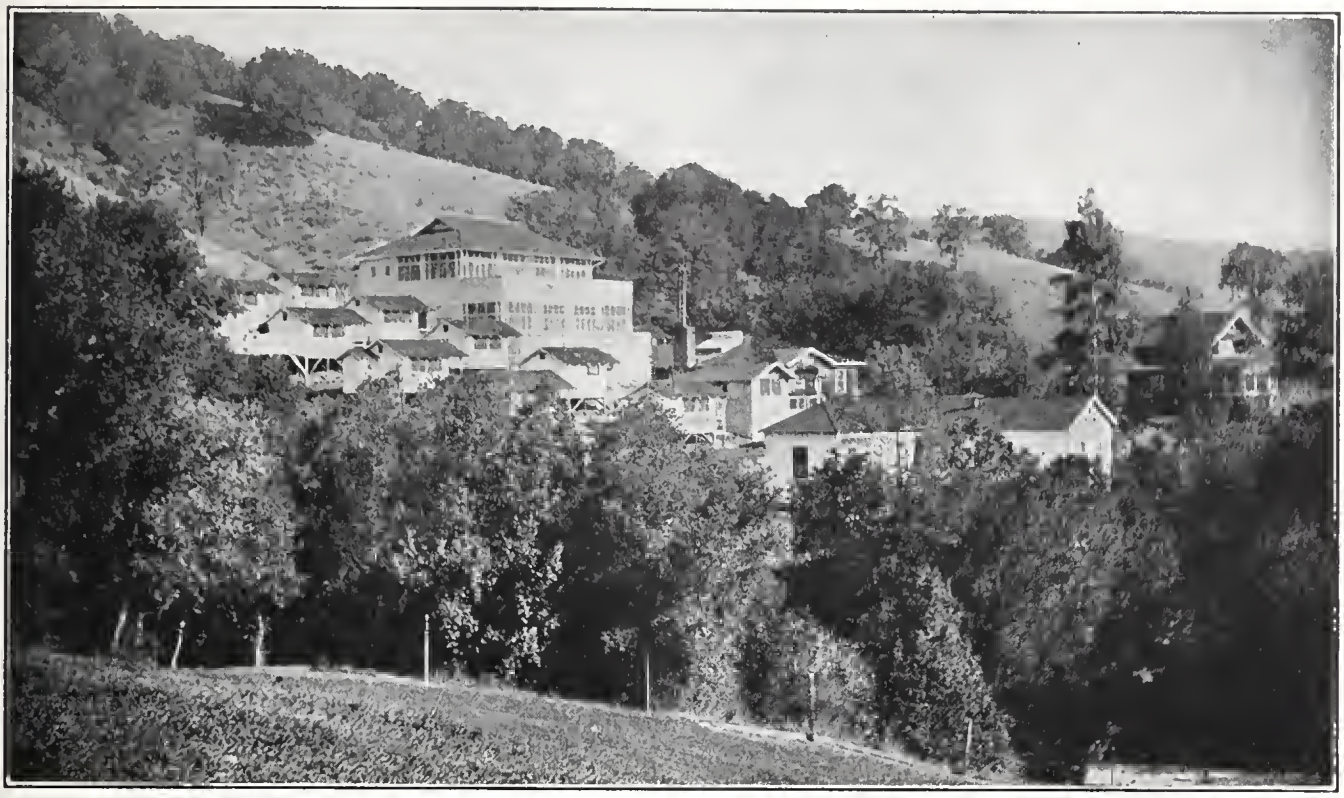
EXUBERANT youth scorns caution in the joy of living. Health frequently is the price of that gesture. The chief foe of youth is tuberculosis. It can be prevented and cured, yet it still is the greatest cause of death among children between 5 and 20. Thousands of adults, remembering timely aid from their local tuberculosis association, can look with gratitude at Christmas Seals and say, "Thanks for Health."

The National, State *and* Local Tuberculosis Associations *of the* United States

Buy CHRISTMAS SEALS

The Oaks Sanitarium *Los Gatos, California*

A MODERATELY PRICED INSTITUTION FOR THE SCIENTIFIC TREATMENT OF TUBERCULOSIS



FOR PARTICULARS AND BOOKLET, ADDRESS THE OAKS SANITARIUM, LOS GATOS

WILLIAM C. VOORSANGER, M. D.
Medical Director

San Francisco Office
490 POST STREET

(Continued from Page 21)

If one consults a medical or pharmaceutical authority of the eighteenth century, or earlier, on the subject of bezoar, it will be found that the faith in the efficacy of this drug was so strong that it was believed that "no poison, no eruptive, pestilential or putrid disease, could resist its influence."

Satisfied with this definition the average investigator would dismiss the subject at this point with the assumption that *Acetum Bezoardicum* was a preparation of bezoar in vinegar (*acetum*). But there is a much more interesting tale connected with this name and with this preparation.

It is in reality made from aromatic spices and garlic, extracted with vinegar, and no "bezoar" entered into its composition at all, but the adjective "bezoardic" was intended to have a generic meaning of *antidotal*, as applied to this particular preparation, but to no other, for there were a number of preparations into which bezoar actually entered as an ingredient in the days when it was held in high repute.

If the searcher looks still further he will find that it was called *"Gewürz Essig"* (spice vinegar); "Pest Essig (plague vinegar); *"Acetum Prophylacticum"* (prophylactic vinegar); and *"Vinaigre des Quatre Voleurs"* (vinegar of the four thieves), and that it had a most unusual history.

The story told of its origin is, that during an epidemic of "the plague" in Marseilles in the early part of the eighteenth century, four robbers, by the use of this prophylactic, attended without harm hundreds of dead and dying citizens, and under the guise of these disinterested services they robbed their victims; and that one of them upon being caught confessed their crimes and saved himself from punishment by divulging the composition of the preventive they had employed to pursue their nefarious practices.

The belief in this fanciful tale was so strong that the preparation soon attained a wide sale in both Europe and America and this sale continued for more than a century.

The interesting part of the story is that a modified form of this same remedy is still official in the National Formulary of the United States and in a number of foreign pharmacopeias as well under the name of Aromatic Vinegar.

Frequency of Disasters.—A disaster every five and one-half days. This was the average for nine months of the disasters of nature in which the American Red Cross rendered aid. Beginning with the Long Beach earthquake in Southern California, March 10, and ending the Middle of May, disasters struck in 139 counties in 21 states. Five of these states were stricken three or more times within that period. The American Red Cross is America's assurance that suffering and want shall not follow upon disaster and great emergency. It is the pledge of the Greatest Mother that human needs shall be met even before the hurricane subsides, or the flood crest shall be reached.

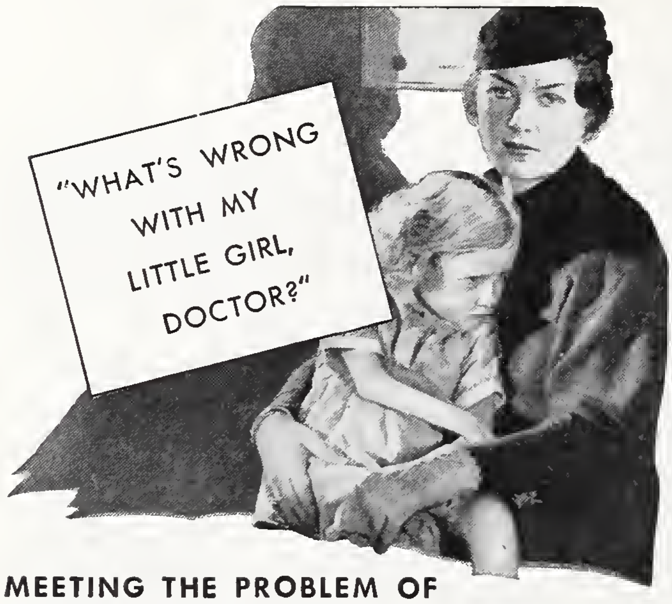
Control of Psittacosis Receives Endorsement.—The Western Branch of the American Public Health Association, at its annual meeting held recently in Pasadena, adopted the following resolution pertaining to the control of psittacosis:

WHEREAS, The recent appearance of psittacosis in California and other western states has established this disease as a distinct menace to the public health, and

WHEREAS, Scientific investigations have proved that birds of the psittacine family, particularly parrakeets in California, are infected with this disease, and

WHEREAS, Intensive research into psittacosis among psittacine birds in California together with the enforcement of adequate regulations governing the importation of such birds into the United States should necessitate stringent measures in the control of this disease, and

(Continued on Next Page)


"WHAT'S WRONG WITH MY LITTLE GIRL, DOCTOR?"

MEETING THE PROBLEM OF

MALNUTRITION

—especially in children who dislike milk

WHILE malnutrition in children may be due to premature birth, to some constitutional debility or the development of some serious disease, the great majority of cases are due to improper or faulty diet.

Insufficient milk is by far the most serious failing in children's diets. This is due, no doubt, to the fact that so many youngsters dislike milk and refuse to drink it. More and more physicians are meeting this problem by prescribing Cocomalt—which is as alluring as chocolate soda to children.

Prepared as directed, Cocomalt adds 110 extra calories to a cup or glass of milk—increasing the protein content 45%, the carbohydrate content 184%, the mineral content (calcium and phosphorus) 48%. It is rich in Vitamin D, containing no less than 30 Steenbock (300 ADMA) units of Vitamin D per ounce—the amount used to make one drink. (Licensed by Wisconsin University Alumni Research Foundation.)

This rich Vitamin D content, combined with the extra calcium and phosphorus provided by Cocomalt and milk, aids substantially in the development of strong bones and sound teeth.

At grocery and drug stores in ½-lb. and 1-lb. vacuum-sealed cans. Also in 5-lb. cans for hospital use, at a special price. R. B. Davis Co., Hoboken, N. J.

NRA MEMBER U.S. WE DO OUR PART

Free to Physicians

Send your name and address for a trial-size can of Cocomalt, free.

ACCEPTED AMERICAN MEDICAL ASSN. Committee on Foods

Cocomalt is accepted by the Committee on Foods of the American Medical Association

Cocomalt

DELICIOUS HOT OR COLD

Cocomalt is composed of sucrose, skim milk, selected cocoa, barley malt extract, flavoring and added Vitamin D.

ADDS 70% MORE FOOD-ENERGY TO MILK

(Prepared according to label directions)

R. B. DAVIS CO., Dept. BC-12, Hoboken, N. J.
Please send me a trial-size can of Cocomalt, free.

Dr. ....

Address ....

City .... *State* ....

For use in the Prevention and Treatment of the Acid-Ash Type of

ACIDOSIS

California Lima Bean FLOUR!

Alkalinity, of course, neutralizes *acidity*. And Limas are one of the most alkaline foods known—41.65 per 100 grams!

To meet a definite demand from the medical profession, we have developed, to a high degree of fineness, a Lima Bean FLOUR—for making non-acid breads, muffins, pancakes and waffles for Basic Diet menus!

Lima FLOUR— is available in 10-lb. bags at $1.20, and in 100-lb. bags at $10.00. Upon receipt of price and delivery instructions your order will be shipped parcel post or express collect. Send orders, and make check or money order payable to—

CALIFORNIA LIMA BEAN
GROWERS ASSOCIATION
Oxnard, California

(Continued from Preceding Page)

WHEREAS, The United States Public Health Service is rendering invaluable assistance to California and to all other states through the maintenance of its local laboratory for the study of psittacosis and through the enforcement of regulations governing the importation of psittacine birds; now, therefore, be it

Resolved, That the Western Branch of the American Public Health Association request the United States Public Health Service to continue the maintenance of its laboratory for the study of psittacosis in California, and be it further

Resolved, That the United States Public Health Service be requested to take all necessary precautions to prevent the introduction of psittacine birds into the United States, and be it further

Resolved, That these resolutions be spread upon the minutes of the association and that a copy be sent to the Surgeon General of the United States Public Health Service.—*Weekly Bulletin, California Department of Public Health.*

Federal Regulation Covering Psittacine Birds.—The United States interstate quarantine regulation pertaining to interstate shipments of psittacine birds, issued by the United States Public Health Service almost a year ago, is still in effect. Following is the text of the regulation:

"No person, firm or corporation shall offer for shipment in interstate traffic, and no common carrier shall accept for shipment or transport in interstate traffic, any parrot, parrakeet, love bird, macaw, cockatoo, lory, lorikeet, or any other bird of the parrot or psittacine family, unless an accompanying certificate has been obtained from the state health authority to the effect that to the best of the knowledge and belief of such authority such bird as may be offered for shipment has originated from an aviary, or other distributing establishment, free from psittacosis infection."—*Weekly Bulletin, California Department of Public Health.*

The
James H. BARRY Company
Printers and Publishers

THE supreme question which the Times puts up to people today is to decide whether they wish most to give or to get; to serve mankind or to exploit it; whether they will choose the career where they can do most good tomorrow, or take the job that pays best today; whether they prefer the cutthroat methods of competition, too prevalent in business, or the co-operative methods by which science, the other great institution of the modern world, has been built up. Both individual and group selfishness must be transcended, and nothing less than a new dispensation of service and a new enthusiasm for humanity must be instituted. This will begin not by concerted or organized movement from without, but can take its rise only within the soul of each individual man who dedicates himself to service, and has penetrated the great secret of the human heart, that IT IS MORE BLESSED TO GIVE THAN TO RECEIVE.

AN EXCERPT FROM "SALVAGING CIVILIZATION," BY G. STANLEY HALL

FREDERICK RAY

Collection Specialist

Operating

"ADJUSTMENT SERVICE"

Since 1918

Wilson Building ✓ First and Spring ✓ Los Angeles

MEMBER

Commercial Law League of America

American League of Collection Agencies

California Association of Mercantile Agencies

Depository: Security First National Bank, First and Spring, Los Angeles.

Licensed by State of California.

Bonded by U. S. Fidelity and Casualty and A. C. S., Detroit, Mich.

Detailed information and references furnished on request. Mail in your delinquent accounts now. Membership in various agencies permits not only United States but a world-wide collection service. Get your debtors out of **your** books and into **mine.**

QUALITY SERVICE DEPENDABILITY

DIEDERICH OPTICAL COMPANY, INC.

WHOLESALE AND MANUFACTURING OPTICIANS

OCULISTS' PRESCRIPTIONS FILLED

The prescription service we offer is backed by our name, which has been attained by doing high grade work for many years.

Suite 410, Bankers Building, 629 South Hill Street

Los Angeles, California

Campbell Warns Public Against Dangerous Eyelash Dye.—Letters received by the Federal Food and Drug Administration concerning injury to users of "Lash-Lure," an eyelash dye manufactured by Lash-Lure, Inc., Los Angeles, California, led W. G. Campbell, Chief of the Administration, to issue the following statement on October 26, 1933.

"We recently investigated the case of a prominent Dayton, Ohio, clubwoman who was made totally blind as a result of an application made by a beauty-parlor operator of this highly poisonous cosmetic. Lash-Lure, according to *The Journal of the American Medical Association,* contains an aniline dye which is extremely corrosive and capable of burning away the outer coating of the eyes. The Administration has investigated a number of cases of blindness or seriously impaired vision attributed to the use of this injurious eyelash 'beautifier.' The medical literature contains accounts of a number of ocular injuries caused by the cosmetic. A number of these are printed on pages 1016 and 1017 of *The Journal of the American Medical Association,* September 23, 1933.

"The Administration recently received a complaint from a cosmetic manufacturer in Chicago to the effect that the showing of a news reel containing a reference to the highly dangerous character of this product was unfair to the cosmetic industry," continued Mr. Campbell. "We understand the reactions of some cosmetic manufacturers, but insist that the public is entitled to have the facts. Cosmetic manufacturers who are putting out safe products should welcome any governmental move taken against dangerous products of the type of Lash-Lure. At present the Administration has no legal power to take such action. So far as cosmetics are concerned, the Administration's authority is limited to those products which bear curative

The California Sanatorium

Belmont (San Mateo County), California

FOR THE TREATMENT OF TUBERCULOSIS

Completely Equipped ✓ *Excellent Cuisine*

Dr. Max Rothschild
Medical Director

Dr. Harry C. Warren
Associate Medical Director

RATES AND PROSPECTUS ON REQUEST

Address: BELMONT, Calif.
Phone BELMONT 100
(3 Trunk Lines)

San Francisco Office
384 Post Street
Phone DAVENPORT 4466

claims on their labels. Lash-Lure is not labeled with remedial declarations.

"When the Administration was unable recently to proceed against an extremely dangerous depilatory, Koremlu, we were bitterly assailed by many critics who wanted to know why action was not taken against the cosmetic. Koremlu contained a deadly poison, thallium acetate, which caused serious injury to users. Yet, due to deficiencies in the present pure food and drug law, enforcing officials were unable to proceed against this product or its manufacturer. In spite of our inability to direct regulatory action against Lash-Lure, Koremlu, and numerous other dangerous cosmetics, we firmly believe that we would be seriously remiss if we did not inform the public by every means in our power of the dangers involved in using such poisonous 'beautifiers.' The loss of even one person's eyesight is such a terrible thing that we can offer no excuse for not putting the public on guard against a sight destroyer.

"It is unfair to the ethical and careful manufacturers of cosmetics to force them to suffer an impairment of public confidence which the operations of a few careless, brutal, or unscrupulous manufacturers occasion by their reckless distribution of highly toxic substances," Mr. Campbell stated.

Sewer-Farm Regulations.—The regulations pertaining to the use of sewage effluent for irrigation adopted by the California State Board of Public Health May 27, 1933, have been published in the *Weekly Bulletin.* For decades this state has had the reputation of holding to high hygienic ideals in the use of sewage for watering or fertilizing crops. The new regulations are more stringent than those which had been in force heretofore. They are designed to meet the demand for the use of high grade, fully disinfected effluents. They were in course of preparation for many months and are the result of many conferences

(Continued on Page 30)

When Steers Had Long Horns

THE medicinal value of the glands of internal secretion was not recognized.

But times have changed, as well as cattle. Now, the therapeutic value of certain gland products is definitely established and each year adds to our knowledge in this important field of therapeutics.

To the physician prescribing gland products we urge specification of "Wilson," because it connotes a product made at the source of supply from fresh glands, processed promptly, with the aim of conserving maximum hormone activity, in a laboratory devoted exclusively to the endocrine field.

"This mark THE WILSON LABORATORIES your guarantee"

4221 S. Western Boulevard
CHICAGO, ILL.

Manufacturers of

STANDARDIZED ANIMAL DERIVATIVES, LIGATURES and DIGESTIVE FERMENTS

CALSO WATER

Palatable ALKALINE *Sparkling*

NOT A LAXATIVE

Calso Water: An efficient method of supplying the normal ALKALINE SALTS for counteracting ACIDOSIS.

Calso Water: Made of distilled water and the ALKALINE SALTS (C. P.) normally present in the healthy body.

Calso Water: Counteracts and prevents ACIDOSIS, maintains the ALKALINE RESERVE.

●

The Calso Company

524 Gough Street
San Francisco

Transportation Bldg.
Los Angeles

A FEW CHOICE LOCATIONS AVAILABLE

AT A REDUCED RENTAL SCHEDULE

APPLY TO

CHAS. W. SMITH

BUILDING MANAGER

ROOM 415 450 SUTTER STREET

Telephone GARFIELD 7221

FOUR FIFTY SUTTER

Ten Acres of Beautiful Grounds

COMPTON SANITARIUM and LAS CAMPANAS HOSPITAL

COMPTON, CALIF.

30 minutes from Los Angeles. 130 beds for neuropsychiatric patients. 40 beds for medical-surgical patients. Clinical studies by experienced psychiatrists. X-ray and clinical laboratories. Hydrotherapy. Occupational therapy. Ten acres landscaped garden. Tennis. Baseball. Motion pictures. Scientifically sound-proofed rooms for psychotic patients. Accommodations ranging from ward beds to private cottages.

GLENN MYERS, M. D., *Medical Director*
Philip J. Cunnane, M. D. G. Creswell Burns, M. D.
Helen Rislow Burns, M. D.

Office: 1052 West 6th Street, Los Angeles

with health officers, officials and prospective users of sewage.

The regulations may be summarized as follows:

1. Prohibit the use of raw sewage or raw sludge on growing crops of any description.

2. Permit use of sludge for fertilizing vegetables, low-growing fruits and berries, only if the sludge has been rendered innocuous and free of the danger of spreading disease by such measures as kiln drying, bed drying or aging in storage (in either case not less than thirty days) or treating or conditioning the sludge to the satisfaction of the State Department of Public Health, or digesting it to the point where the sludge is odorless, drains readily, and not over 50 per cent of the total solid matter is in volatile form.

3. Prohibit the use of settled or undisinfected, though oxidized, effluents on any vegetable crop, but permit such use in irrigating orchards and vineyards and on field crops such as grain, cotton, rice and the fodder crops.

4. Impose no restrictions on the use of thoroughly oxidized and dependably disinfected or filtered effluents, which meet the following bacterial standard: in any twenty consecutive samples, from which five ten-cubic centimeter portions each are examined, not over ten portions shall be positive for members of the Coli-aerogenes group, and in no single sample shall over half the .1 cubic centimeter portions of the sample of the effluent be positive for the above organisms. Precautions to be taken in construction and operation of the disinfecting plant are set up to equal those in the best run water disinfecting plants.

Cross connections between lines carrying sewage or effluent, and water lines, are forbidden.—*Weekly Bulletin, California Department of Public Health.*

The Greatest Mother In Time of Disaster

THE Disaster relief service, like the other services of the Red Cross, is maintained through the memberships of the American people, pledged during the annual Roll Call from Armistice Day to Thanksgiving.

The Red Cross never pauperizes. Like a good neighbor, it extends a helping hand and lends a sympathetic ear. Before it leaves the scene of devastation, the Greatest Mother has housed, fed and clothed every victim left destitute, rehabilitated every family, found a home for every orphan and provided medical and nursing care for every injured victim.

Fifty-two years of experience in dealing with disasters of every type have won for her the status of the greatest disaster-relief agency in the world. Nationally authorized by the terms of her charter to maintain this rôle, it has met, undismayed and with unfailing adequacy, the almost overwhelming demands of such staggering national disasters as the great Mississippi floods of 1927; the success droughts of 1930-31, and, during the recent depression, the nationwide unemployment crisis when she distributed bread and clothing to no less than 25,000,000 individuals.

During the past year there has averaged a disaster every five and one-half days—92 in the United States and its possessions. Beginning with the Long Beach earthquake in Southern California March 10, and ending the middle of May, disasters struck in 139 counties in 21 states. Five of the states were stricken three or more times within that space of time.

Effective IODINE MEDICATION

With the Undesirable Features Minimized

ACCEPTED
AMERICAN MEDICAL ASSN
Council on Pharmacy and Chemistry

The usefulness of iodine therapy is well established, but how to secure it without iodism has long been a problem. In a general sense, of course, iodine therapy is inseparable from iodism, but barring idiosyncrasies, the severity of the symptoms of iodism is directly proportional to the amount of iodine retained in the blood. This amount, in turn, depends upon the quantity administered.

RIODINE (Astier)

Organic Assimilable Iodine

In RIODINE (Astier), which is a 66% solution in oil of an iodized glyceric ether of ricinoleic acid, containing about 17% of iodine, the iodine is held in such a form as to pass through the stomach unchanged as iodized fat, and to be absorbed from the intestines. Consequently, it is held in the cells in a lipoid-soluble form and remains in the body for a considerable period of time.

RIODINE (Astier) is of obvious advantage in cases where the continuous action of small amounts of iodine is desired, such as *Cardiorenal disturbances, Hypertension (Arteriosclerosis), Bronchial Asthma, Chronic Bronchitis, Pulmonary Emphysema, Chronic Rheumatoid Arthritis, Latent Syphilis, Lead Poisoning, Hypothyroidism, Simple Goiter, Obesity.*

Write for information and sample

Gallia Laboratories, Inc.
450 Seventh Avenue, New York

*

ELI LILLY AND COMPANY

FOUNDED 1876

Makers of Medicinal Products

In the non-diabetic, undernutrition is frequently encountered. That this condition may be at times dependent upon, or at least associated with, relative or absolute "dextrose deficiency" is suggested by the fact that therapeutic benefit follows when additional carbohydrate is supplied and its utilization assured with Insulin.

Physicians are invited to send for a pamphlet, "THE USE OF INSULIN IN NON-DIABETIC MALNUTRITION"

PROMPT ATTENTION GIVEN TO PHYSICANS' INQUIRIES

ADDRESS ELI LILLY AND COMPANY, INDIANAPOLIS, INDIANA, U. S. A.

CALIFORNIA
AND
WESTERN MEDICINE

Owned and Published Monthly by the California Medical Association
Four Fifty Sutter, Room 2004, San Francisco
ACCREDITED REPRESENTATIVE OF THE CALIFORNIA AND NEVADA MEDICAL ASSOCIATIONS

VOLUME XXXIX DECEMBER, 1933 No. 6

INSULIN-FREE PANCREATIC EXTRACT AND THE CIRCULATORY HORMONE (KALLIKREIN OF FREY AND KRAUT)*

A COMPARATIVE STUDY OF THEIR EFFECTS ON ANGINA PECTORIS

By Franklin R. Nuzum, M. D.
and
Albert H. Elliot, M. D.
Santa Barbara

Discussion *by H. O. Koefod, M. D., Santa Barbara; Hans Lisser, M. D., San Francisco.*

In 1920, Pribram and Herrnheiser,[1] studying the nondialysable fraction of human urine, found that it caused a fall in blood pressure on injection into the rabbit. Eight years later, Prof. E. K. Frey, chief of the Sub-surgical Clinic of the Medical Academy of Düsseldorf, and his coworkers described the properties of a vasodilator substance recovered from the urine, which he now regards as a hormone and which he has named Kallikrein. This principle exerts a regulatory function upon the distribution of the circulating blood, dilating the arterioles of the brain, lungs, skin and muscles[2] with resultant fall in blood pressure. Elaborated in the pancreas, it exists normally in the circulating blood in combination with an inactivator, a polypeptide probably produced in the lymph glands, and is released by change of pH to the acid side.[3,4] It is secreted into the urine in an active form where it may be recognized by a typical reaction on intravenous injection into the experimental animal, namely, a fall in blood pressure and an increase in amplitude of cardiac contraction.[5] Frey states that, when calibrated in dog units by this latter effect, one unit is contained in 3 to 5 cubic centimeters of human urine and 2 to 20 cubic centimeters of blood.[2] Chemically and physiologically this substance is distinct from histamin, cholin, purine bodies and other hormones.[5]

This substance has received extensive clinical trial on the Continent in the treatment of angiospastic disease with, to date, rather conflicting results. The literature is too large to be reviewed in detail. Favorable results have been reported in the treatment of essential hypertension,[6, 7, 8] angiospastic gangrene and intermittent claudication.[9, 10, 11] In angina pectoris, the available studies are conflicting, but Frey [9] and Leschke,[7] who have had the most experience with this method of therapy, have secured a favorable response in some cases, which Singer [12] attributes to a foreign protein reaction.

In 1929, Vaquez, Giroux, and Kisthinios [13] reported remarkable results in a series of twenty patients having angina pectoris treated with an insulin-free extract of pancreas whose physiologic activity had been studied by Gley and Kisthinios. These workers [14] prepared an extract which contains a heat-stable depressor principle, an adrenalin antagonist, which was found, upon intramuscular injection, to so ameliorate the anginal syndrome that Vaquez considered this method of treatment superior to other measures. He attributed the results to a trophic action upon the blood vessels. Numerous confirmatory reports have since appeared in the foreign literature [7, 15, 16, 17] and one in this country.[18]

We have been studying these substances since 1930. Pharmacologic investigations, published in detail elsewhere,[19] may be summarized here. The extract of pancreas dilates the coronary arteries of the perfused heart of a rabbit to a greater degree than that produced by the most active of the purine derivatives, theophyllin ethylenediamin. The circulatory hormone (Kallikrein) is likewise a coronary dilator, but is somewhat more feeble than the pancreatic extract as compared on the basis of hypotensive activity.

The pressor effect in the rabbit of intravenously injected adrenalin may be inhibited by both of these substances. This is a constant attribute of the circulatory hormone, Kallikrein, but the adrenalin antagonism exerted by different batches of pancreatic extract is extremely variable. While we have been unable to produce the typical increase in cardiac contraction with any lot of pancreatic extract yet tested, it seems likely that the adrenalin antagonism exerted by some of the samples may be due to an inconstant content of circulatory hormone. The latter also protects the rabbit from lethal doses of intravenous adrenalin, but this protection is not afforded the rat. It is an interesting observation that the effect of adrenalin upon the carbohydrate metabolism, as measured by hyperglycemia, is not influenced by the hormone.

---

* Read before the General Medicine Section of the California Medical Association at the sixty-second annual session, Del Monte, April 24-27, 1933.

Our attempts to identify the active principles of these preparations have not met with success. It has been suggested [18] that the pancreatic extract contains adenylic acid or adenosin, derivatives of nucleic acid which are depressor substances and coronary dilators. We have been unable to demonstrate their presence in these preparations by either biologic or chemical methods (data to be published).

In summary, we feel that, while the extract of pancreas may contain circulatory hormone, there is present, in addition, another substance, or substances, upon which, in part at least, its therapeutic activity may depend.

CLINICAL

In 1931, we reported the results of treatment with pancreatic extract obtained in twenty patients with angina pectoris.[20] A control series of forty patients, treated by the usual medical measures, was also studied. The extract was given intramuscularly in a dosage of from 30 to 60 hypotensive units on alternate days, or twice weekly, for a total of from ten to twenty injections. The course of injections was repeated a second or even a third time, if results were not apparent after the first series. The average follow-up period was 6.7 months, varying from 1 to 13 months. Two, or 10 per cent, of these patients were refractory; 25 per cent were somewhat relieved; 55 per cent were greatly helped, and two, who had been benefited, died later while under observation. These results were noticeably better than those obtained in the control group. The anginal attacks frequently ceased during or after the injections in the patients responding. In some instances this improvement persisted as long as six months. The response to treatment was nearly as good in instances of long-standing severe angina as in those patients suffering less severe seizures, and appeared to be quite independent of the presence of myocardial damage as shown in the electrocardiogram. Incidentally, we could not demonstrate any change in the latter as the result of treatment, nor was the blood pressure noticeably altered in those patients with hypertension.

It has been possible to follow to the present time fifteen of these twenty patients treated with pancreatic extract. Three have died—one from cardiac decompensation, one from a ruptured appendix, and one as the result of a coronary occlusion. The anginal attacks returned in four of the remaining patients and were not influenced by further exhibition of the extract. Another patient, previously reported as refractory to the treatment, has remained so on further trial. In seven patients the original improvement has been maintained. Four of these had a severe type of angina initially, of whom three had electrocardiographic evidence of myocardial damage. Two had attacks of moderate frequency and severity; one suffered from mild seizures. This, together with further use of the extract, has strengthened us in our opinion that hypodermically given pancreatic extract offers an addition of value to the therapy of angina pectoris.

CIRCULATORY HORMONE

During the past year, Dr. Fritz Bischoff, working in the Cottage Hospital laboratory, has been able to supply us with a limited quantity of a concentrated preparation of this substance. The method of preparation will be published elsewhere. We have treated ten carefully studied patients having angina pectoris with this preparation, and in a number of them have been able to compare its effects with those resulting from an exhibition of the extract of pancreas. The substance has been given intramuscularly daily, or on alternate days, in a dosage varying from 50 to 250 units (a unit being the amount which, injected into the jugular vein of a grown rabbit, is just sufficient to cause a fall in blood pressure and an increase in pulse amplitude of from three to four minutes' duration). There are no toxic effects, but in several patients a nonspecific protein reaction resulted which was subsequently obviated by initially graded small doses.

The group consisted of five females with an average age of fifty-nine years, and five males with an average age of sixty-five years. Hypertension was present in three of the females. The blood Wassermann reaction was negative in every instance. There was electrocardiographic evidence of myocardial damage in five patients.

Five of the patients received the circulatory hormone alone in a total dosage of from 600 to 4,500 units. Two patients were apparently benefited, but in one, a woman, the psychic element may well have been responsible. The other patient, a man seventy-seven years of age, with an angina of sixteen years' duration, has returned to his business, and has decreased his nitroglycerin intake from that of two to three tablets a day to one or two a week. However, he has been followed for only several weeks. The remaining five patients received both preparations, the hormone Kallikrein and the pancreatic extract. One patient died without receiving benefit. Two patients, after receiving extract of pancreas, were free of attacks for periods of three and seven months, respectively. Upon return of symptoms, they were given the circulatory hormone with apparent relief, but the follow-up observation has been relatively short. The two remaining patients are of particular interest. They received, respectively, 1,540 to 2,500 units of the hormone Kallikrein over periods of two and four weeks without benefit. They were then given the extract of pancreas. One patient suffered no further seizures after the sixth injection and has remained symptom-free to the time of writing, a period of two months. The other patient, who had previously had a coronary occlusion with a resultant incapacitating angina pectoris, likewise experienced immediate relief, and is completing her course of injections at the present time.

COMMENT

The laboratory evidence which indicates that the extract of pancreas is not dependent upon a content of circulatory hormone to explain its activity has been reviewed. We believe that the foregoing clinical experiences strengthen this assumption, but by no means prove it. Our series of patients treated with the hormone is small. We do not wish to draw the definite conclusion that this substance will prove valueless in the treatment of angina pectoris, but we believe that its primary field of usefulness will lie elsewhere. The extract of pancreas is, in our opinion, of definite value, and we recommend its trial, particularly in those patients who are not relieved by other measures.

SUMMARY

1. The physiologic properties of an insulin-free extract of pancreas and of the circulatory hormone (Kallikrein) are briefly reviewed.

2. Evidence is adduced which indicates that the pancreatic extract is not dependent upon a content of the hormone to explain its entire activity.

3. Experiences with the use of pancreatic extract in the treatment of angina pectoris are described. Favorable follow-up observations on a previously reported series of cases are given.

4. The results obtained by the use of both preparations in a small series of cases indicate that the circulatory hormone will prove ineffective in many instances, whereas an exhibition of the pancreatic extract may give beneficial results.

Santa Barbara Cottage Hospital.

REFERENCES

1. Pribram, H., Herrnheiser, G.: The Nondialysable Constituents of Human Urine, Biochem. Z. 111:30-80, 1920.

2. Frey, E. K., Kraut, H.: Nachweis und Wirkung eines Kreislaufhormons, Münchener med. Wchnschr., 75:763-764 (May 4), 1928.

3. Frey, E. K., Kreislaufhormon und innere Sekretion, Münchener med. Wchnschr., 76:1951-1952 (Nov. 22), 1929.

4. Frey, E. K.: A New Internal Secretion of the Pancreas, Foreign Letter, J. A. M. A., 95:676 (Aug. 30), 1930.

5. Frey, E. K.: Eines neues Kreislaufhormon und seine Wirkung, Arch. f. Exper. Path., 133:1-56, 1928.

6. Scharpff, W.: Die Behandlung der Hypertonie mit dem Frey-Krautschen Kreislaufhormon Padutin (Kallikrein), Deutsche med. Wchnschr., 57:675-678 (April 17), 1931.

7. Leschke, E.: Erfahrungen mit dem Kreislaufhormon "Kallikrein," Münchener med. Wchnschr., 77: 1167-1175 (June 22), 1930.

8. Binswanger, H.: Einige Beobachtungen mit dem neuen Kreislaufmittel "Kallikrein," Deutsche med. Wchschr., 57:1057-1058 (June 19), 1931.

9. Frey, E. K.: The Circulatory Hormone of the Pancreas—Its Therapeutic Uses, Deutsche Zeit f. Chir., 233:481 (Oct.), 1931.

10. Schauder, H.: Zur Behandlung des intermittierenden Hinkens, Münchener med. Wchnschr., 77: 485-486 (March 21), 1930.

11. Muskat: Weitere Erfahrungen mit Padutin (Kallikrein) bei Gestörungen auf arterieller Basis, Med. Klin., 28:301-302 (Jan. 15), 1932.

12. Singer, R.: Die praktischen Ergebnisse der "Herz Hormon" Therapie, Wien klin. Wchnschr., 46:39-42 (Jan. 9), 1931.

13. Vaquez, H., Giroux, R., Kisthinios, N.: De l'Action de certains extraits pancréatique dans le traitment de l'angine de poitrine, Pressé Medicale (Paris), 37:1277-1279 (Oct. 2), 1929.

14. Gley, P., Kisthinios, N.: Recherches sur la substance hypotensive du pancréas, Presse Medicale, 37:1279-1282 (Oct. 2), 1929.

15. Dimitricoff, C.: Contribution au traitment de l'angine de poitrine par le nouvel extrait pancréatique désinsuline, Progrés Med., 1762-1766 (Oct. 25), 1930.

16. Giroux, R., Kisthinios, N.: Les extraits désinsulinés en thérapeutique, Monograph, Paris, 1931, Masson & Cie.

17. Kisthinios, N.: Die therapeutische Anwendung des insulinfreien Pankreas-extraktes, Wien klin. Wenschr., 1:610-615 (May), 1931.

18. Wolffe, J. B., Findlay, D., Dessen, E.: Treatment of Angina Pectoris with a Tissue Vasodilator Extract, Ann. Int. Med., 5:625 (Nov.), 1931.

19. Elliot, A. H., Nuzum, F. R.: The Pharmacologic Properties of an Insulin-Free Extract of Pancreas and the Circulatory Hormone of Frey, J. Pharmacol. and Exper. Therap., 43:463-475 (Nov.), 1931.

20. Nuzum, F. R., Elliot, A. H.: Pancreatic Extract in the Treatment of Angina Pectoris and Intermittent Claudication, Arch. Int. Med., 49:1007-1018 (June), 1932.

DISCUSSION

H. O. Koefod, M. D. (1421 State Street, Santa Barbara).—I believe it can be conservatively stated that insulin-free pancreatic extract, now on the market under various trade names, is a distinct addition to our treatment of angina pectoris. With kallikrein, the substance obtained from urine, I have had no experience.

In a comparatively small series, while the amount of benefit has varied greatly, it has been definite in over one-third of the cases. In some it has been striking. In the perfused animal, it apparently brings about an increased and prolonged output through the coronary arteries by vasodilatation. It seems difficult to see how this can be the explanation in cases with markedly sclerosed coronary vessels, unless there is an added vasoconstrictor factor. There is clinically no suggestion of increased pressure within the aorta to account for the increased flow. To the possibility that the viscosity of the blood might in some way be changed, I have been unable to find any reference.

There is some question, however, as to the specificity of this substance. An extract with apparently similar action, and comparative results in the treatment of angina, has been prepared from voluntary muscle and other tissues.

Two of my first sixteen cases developed a coronary thrombosis while under treatment with pancreatic extract. This in all likelihood was coincidental. Doctor Wolffe and co-workers reported, in a paper published three years ago, the development of a coronary T-wave in two of twenty cases while under treatment. An elderly patient of mine with hypertension who did not respond to the pancreatic extract did well on euphyllin.

While I feel that the pancreatic extract is of distinct value, I believe it will require several years of clinical trial to find its true worth in the therapy of vascular disease.

⁂

H. Lisser, M. D. (384 Post Street, San Francisco).—Doctors Nuzum and Elliot deserve great credit for their timely presentation of observations on these interesting extracts. Though condensed with commendable brevity, even a slight acquaintance with this sort of investigation reveals the considerable skill and labor involved, both in the preparation of these substances and in their careful clinical application.

The authors, when inviting the writer to participate in the discussion of their conservative paper, were aware of his very limited experience with these hormones, but no doubt included him because of his particular interest in clinical endocrinology. His comments, therefore, cannot be directed to the immediate points they raised, but must be transposed into reflections on the wider implications of their thesis.

The astute observations initiated by Herrick many years ago have permitted an improved recognition of the significant distinctions differentiating angina pectoris and coronary occlusion. The latter condition, with its graver import, is based upon coronary vessel damage, whereas the former arises, presumably, from sympathetic spasm. This underlying pathologic difference demands a correspondingly different therapeutic approach.

It is altogether likely that a number of circulatory disorders, in addition to angina pectoris, have their origin in the common denominator of sympathetic sensitization or hypertonus. One need but mention intermittent claudication, Raynaud's disease, certain forms of gangrene, perhaps essential hypertension, and autonomic imbalance with vasomotor instability, as familiar varieties of angiospasm.

In the attempt to ameliorate or alleviate these vessel tightenings, resort has been had to a great number of drugs capable of producing some degree of vasodilatation. From most of these, merely transient pharmacodynamic effects have been obtained. The results achieved by Nuzum and Elliott and their predecessors, to whom they refer, seem, in some instances at least, to be of a more durable character; perhaps because body substances are utilized of which there may be a lack, with restoration of a more normal circulatory mechanism.

In recent years effort has been redirected, both medically and surgically, to a more specific and profound attack on the transmission lines of the sympathetic system itself, or at certain power houses, such as the adrenals, which store and release some of the stimulating energies of the network. Surgeons have performed such daring and novel maneuvers as ganglionectomies, nerve resections, adrenal denervations, and even adrenalectomy, followed at times by spectacular relief. One need but cite the prompt and complete cessation of violent attacks of paroxysmal hypertension by removal of an adrenal paraganglioma (cases of Mayo, Pincoffs and Shipley, Porter and Porter).

After all, it may turn out that angiospastic states occur because of an undue ascendency of the adrenal medullary stimulant adrenalin, due to a deficiency of its normal antagonists such as the circulatory hormone of Frey (kallikrein) or the insulin-free pancreatic extract. Now that two separate and differing extracts have been prepared from the posterior hypophysis, and two (with the probability of two or three more) from the anterior pituitary, it would not be surprising if a third extract, in addition to trypsin and insulin, were established for the pancreas. Also, since the anterior pituitary-like substance obtained from human pregnancy urine and human placenta may not be different and separate hormones from the sex hormones obtained directly from the prehypophysis itself, but merely altered in transit from gland to urine, so is it not likewise conceivable that the insulin-free pancreatic extract and the circulatory-urine extract kallikrein may be one and the same, but that the latter has slightly different chemical and physiologic properties because of modifications during transit? Many substances undergo chemical change from their site of origin to site of elimination.

It is to be hoped that greater quantities of these circulatory hormones will be available, and that their potency may be increased so that adequate clinical data may be accumulated. The duration of potency must be ascertained. To this end each batch must be retested periodically. No doubt some of the failures from the use of the commercial preparations can be ascribed to loss of potency. It would be unfortunate if this promising therapy were prematurely abandoned. Further reports from Doctors Nuzum and Elliot, and others, will be awaited with interest.

HYPERPYREXIA BATHS AND EPILEPSY*

THE CHEMICAL AND PHYSIOLOGIC RESPONSES OF THE BODY TO HYPERPYREXIA BATHS, AND THEIR SIGNIFICANCE IN THE EPILEPTIC SYNDROME

By Helen Hopkins, M. D.
Los Angeles

Discussion *by Samuel D. Ingham, M. D., Los Angeles; H. Douglas Eaton, M. D., Los Angeles; Thomas G. Inman, M. D., San Francisco.*

The therapeutic use of hyperpyrexia baths has received increasing attention during recent years. The present state of knowledge concerning the underlying mechanism by which disease processes are influenced has not advanced, however, much beyond that of the ancients, who empirically discovered the healing properties of hydrotherapeutic measures many centuries ago.

Modern clinicians have pointed out the specific value of this measure and have directed attention to the febrile response of the body to hot baths as having special therapeutic significance. Many facts of practical importance have been added to the subject by the observations of Mehrtens and Pouppirt.[1, 2]

Investigation along chemical and physiologic lines has revealed that the protective adjustments set into motion within the body upon exposure to high environmental temperatures are of such a magnitude as to be detected without difficulty, and of a quality as to directly alter the state of functional activity of the nervous system. Objective evidence for the latter assumption is found in the frequently observed clinical signs of tetany and of major convulsive seizures in epileptics during the course of hyperpyrexia baths.

The present discussion will bring to mind briefly the more prominent disturbances in chemical and physiologic equilibrium instituted by hot baths, and will attempt to correlate these changes with their apparent effect upon the convulsive tendency in patients presenting the epileptic syndrome.

SYMPTOMATOLOGY OF HYPERPYREXIA BATHS

A definite train of subjective and objective symptoms develops upon exposure of the human body to high temperature environments. These have been studied and well described by a group of careful observers.[3 to 10] The appearance of frank tetany in a certain number of subjects, and of convulsive reactions in many cases of epilepsy and general paresis, has led to a search for a possible explanation of these phenomena. Other neurological findings have been elicited under the influence of hyperpyrexia baths, to the end that localization of central nervous system pathology has been accomplished in a few cases. Temporary psychic disturbances have also been observed. Currie [11] described the abnormal symptomatology developed in baths of 105 degrees Fahrenheit in 1797, and advised strongly against temperatures above 100 degrees Fahrenheit.

---

* Read before the Neuropsychiatry Section of the California Medical Association at the sixty-second annual session, Del Monte, April 24-27, 1933.

With these preliminary observations in mind, thirty-six hyperpyrexia baths were investigated in a group of well-defined and pronounced cases of the epileptic syndrome. Fifteen per cent of the baths induced typical major seizures, all appearing between twenty and forty-five minutes after the beginning of the bath, during the period of maximum chemical and physiologic change.

The self-evident conclusion that patients presenting convulsive disorders are not at all times in a state of susceptibility to artificially induced seizures is of special scientific interest. Certain preparatory changes, usually expressed in terms of excitability, precede the sudden release of nervous energy in the seizure. It is important to understand the nature of these changes before the mechanism for convulsive reactions may be comprehended. There is some evidence to show that an inherited constitutional convulsive tendency forms the basis for the later development of convulsions, whether of endocrine, chemical or organic origin.[12]

The periodicity of epileptic seizures may be said to represent evidence of a changing or cyclic susceptibility of certain individuals to convulsions, developed upon the basis of metabolic, chemical, physiologic and other changes not thoroughly understood. Foerster [13] and Rosett [14] have shown that the induced alkalosis of pulmonary hyperventilation does not regularly elicit convulsions in well-known epileptic subjects. Along the same line, Brody and De Barenne [15] have demonstrated the inherent fluctuations in excitability of the cerebral cortex. It remained for Krasnogorski [16] to show the pronounced effect of chemical and metabolic factors upon cortical excitation and inhibition.

The close observation of a large number of patients presenting the epileptic syndrome furnishes one with convincing information regarding the wave-like fluctuations in the intensity of nervous excitability occurring in these patients. Clues of impending attacks are acquired at times from the prodromal aurae, but much more frequently, and at an earlier period, are furnished by abnormalities in vegetative function (autonomic nervous system) and augmented motor and psychic activity (cerebrospinal and cerebral systems).

PHYSIOLOGIC CHANGES

The physiologic responses to hyperpyrexia baths are chiefly of respiratory and cardiovascular nature. Under ordinary environmental conditions, the demands of the human organism for cooling are compensated for by pulmonary hyperventilation, augmented elimination of water from the skin (loss of heat by evaporation), and direct radiation and conduction of heat from the body surface.[17, 18] Under the conditions of the bath, heat cannot be dissipated at the surface; and since the pulmonary avenue of escape of heat is inadequate, the body temperature rises in direct proportion to the temperature of the bath. The baths of the present series were conducted with uniform technique, and resulted in a mouth temperature of 105 to 106 degrees Fahrenheit in thirty to forty-five minutes.

During the pulmonary hyperventilation of the bath, excessive amounts of carbon dioxid are lost in the expired air, lowering the carbonic acid content of the blood and terminating in a pronounced disturbance in acid-base equilibrium. Alkalosis of severe grade is developed. As the bath is continued the level of carbon dioxid in the blood falls so low that the respiratory center is only periodically stimulated, and a Cheyne-Stokes type of breathing makes its appearance.[19, 20]

With exposure of the body to external heat, extensive peripheral vasodilatation is reflexly developed.[21, 9, 22, 23, 7] The sudden widening of the vascular bed and the consequent fall in peripheral resistance, as observed in greatly lowered diastolic pressure values, calls for cardiac and blood volume adjustments to insure the continuance of adequate circulation of the blood. The rate and the force of the heart beat are greatly increased, as reflected in the rapidly rising pulse rate and systolic pressure level. Blood volume increases by hemodilution of 10 per cent for the dual purpose of filling the greatly dilated vascular bed, and of bringing a greater volume of blood to the surface of the body for dissipation of heat through the evaporation of the sweat, as well as for direct radiation and conduction of heat from the surface.[17, 18]

In addition to these changes, Mehrtens and Allred [24] have studied the intracranial pressure changes during hyperpyrexia baths. With rising increments of body temperature, the intracranial pressure was found to increase steadily.

In summary, the physiologic adjustments to hot baths have a less apparent and less direct influence upon nervous excitability than those of a chemical nature; nevertheless, those changes which have an activating effect upon the convulsive tendency are, in the light of recent research, the water shifting and the altered intracranial pressure relationships.

CHEMICAL CHANGES

The acid base shift of hyperpyrexia baths may be universally demonstrated in rising pH values.[25, 26, 27, 10, 28] The ultimate pronounced grade of alkalosis follows the loss of carbon dioxid or carbonic acid from the blood (acapnia) during attempted cooling of the body by pulmonary hyperventilation.[29, 30, 20, 31, 5, 25, 18, 6, 7, 9, 10] The uncompensated carbon dioxid deficit thus established, by influencing the dissociation of oxyhemoglobin, causes the development of a state of functional anoxemia within the body.[32] The coexistence of alkalosis and anoxemia has given rise to a controversy of many years standing: it is generally agreed that augmentation of nervous excitability develops during hyperpyrexia baths, but a difference of opinion exists in assigning the cause to the alkalosis *per se*[33, 34, 35, 32, 9, 10] or to the functional anoxemia.[31, 20, 36, 6, 37, 38, 21, 32, 28, 7]

With these changes in nervous function in mind, further chemical studies have been made (unpublished data). In correspondence with Barbour's observations,[17, 18] blood dilution of 10 per cent was demonstrated at the peak of body temperature. Blood sugar values declined roughly 10 per cent.[4, 6, 10, 18, 26] Diffusible and total serum calcium analyses revealed a steady downward trend which, although not great, was, nothwithstanding, significant. The reciprocal relationship between calcium and inorganic phosphorus was born out by the rising serum inorganic phosphorus values.

Despite the presence of blood dilution, the albumin and globulin serum protein fractions were found to increase, owing to the influx of tissue proteins into the blood during the water-shifting.[39, 40, 18, 41] The sodium chlorid content of the blood was not appreciably altered, indicating a balanced equilibrium between the tissue fluid and the blood.[42, 43, 44]

A review of the literature dealing with the influence of blood chemical conditions upon nervous excitability shows that states of alkalosis, anoxemia, hypoglycemia, low diffusible calcium and high inorganic phosphorus content of the blood, have a stimulating action upon nervous tissue. Furthermore, the recent work of Hodskins and his co-workers[45] has shown blood dilution to be associated with the active phases of the epileptic syndrome.

It could be said that the qualitative chemical changes established within the body under the influence of hyperpyrexia baths possess a uniformity of action upon nervous tissue, and in combination exert a pronounced augmenting effect upon nervous excitability.

SUMMARY

The effect of hyperpyrexia baths upon the human organism, then, is one of augmentation of cellular excitability developed upon the basis of alterations in chemical and physiologic equilibrium. The present discussion has been confined to these changes as they concern the functional activity of the nervous system. By the use of this measure, latent neurologic and psychic abnormalities have been made apparent.

The experimental use of hyperpyrexia baths in the study of convulsive disorders has been of practical value in the localization of the central pathology, and has shifted some of the clinically functional cases into the organic group. One outstanding example comes to mind of an adolescent girl who, after investigating the nature of her symptoms and in the absence of positive neurologic findings, was classified as a functional case. A major convulsive seizure was elicited by the bath and unquestionable unilateral localizing signs were brought out. Subsequent encephalographic study after lumbar air injection confirmed the localization and revealed an extensive unilateral atrophy of the cerebral cortex.

In view of the percentage (15 per cent) of hyperpyrexia baths resulting in convulsive reactions in well-known cases of the epileptic syndrome, it should be borne in mind that failure to induce a seizure does not rule out the possibility of epilepsy, while positive results are not only of diagnostic value, but frequently lead to the localization of the lesion.

Because of the property possessed by high temperature baths of augmenting nervous excitability, and of transposing latent into manifest neurologic signs, this experimental method can be offered for the study and diagnosis of a wide variety of disorders of the nervous system. The experimental investigation of the changes effected within the body by hyperpyrexia baths should lead to a better understanding of excitability, and to the discovery of the mechanism for the beneficial influence of fever therapy upon specific disease conditions.

925 Pacific Mutual Building.

REFERENCES

1. Mehrtens, H. G., and Pouppirt, P. S.: Arch. Neur. and Psychiat., 22:700, 1929.
2. Mehrtens, H. G., and Pouppirt, P. S.: J. A. M. A., 95:1910, 1930.
3. Haldane, J. B. S.: Jour. Hygiene, 5:494, 1905.
4. Sutton, H.: Jour. Path. and Bact., 13:62, 1908-1909.
5. Graham, G., and Poulton, E. P.: Quart. Jour. Med., 6:82, 1912-1913.
6. Bazett, H. C., and Haldane, J. B. S.: Jour. Physiol., 55:4, 1921.
7. Bazett, H. C.: Amer. Jour. Physiol., 70:412, 1924.
8. Bazett, H. C.: Jour. Amer. Med. Assoc., 97:1271, 1931.
9. Adolph, E. F., and Fulton, W. B.: Amer. Jour. Physiol., 67:573, 1924.
10. Landis, E. M., et al.: Amer. Jour. Physiol., 76:35, 1926.
11. Currie, J.: Medical Report on the Effects of Water, Cold and Warm, as a Remedy in Fever and Other Diseases. London. T. Cadell and W. Davies. 1797.
12. Cobb, S.: Arch. Neur. and Psychiat., 27:1245, 1932.
13. Foerster, O.: Zentralbl. f. d. ges. Neurol. u. Psychiat., 38:289, 1924.
14. Rosett, J.: Brain, 47:293, 1924.
15. Brody, B. S., and De Barenne, J. G. D.: Arch. Neur. and Psychiat., 28:571, 1932.
16. Krasnogorski, N. I.: Amer. Jour. Dis. Child., 45:355, 1933.
17. Barbour, H. G.: Proc. Soc. Exper. Biol. and Med., 18:186, 1920-1921.
18. Barbour, H. G.: Physiol. Rev., 1:295, 1921.
19. Douglas, C. G., and Haldane, J. B. S.: Jour. Physiol., 38:401, 1909.
20. Henderson, Y.: Amer. Jour. Physiol., 25:310, 1909-1910.
21. Uyeno, K.: Jour. Physiol., 57:203,1922-1923.
22. Goldschmidt, S., and Light, A. B.: Amer. Jour. Physiol., 73:146, 1925.
23. Grollman, A.: Amer. Jour. Physiol., 94:287, 1930; also ibid., 95:263, 1930.
24. Mehrtens, H. G., and Allred, W. L.: Proc. Soc. Exper. Biol. and Med., 28:604, 1931.
25. Haggard, H. W.: Jour. Biol. Chem., 44:131, 1920.
26. Flinn, F. B., and Scott, E. L.: Amer. Jour. Physiol., 66:191, 1923.
27. Cajori, F. A., Crouter, C. Y., and Pemberton, R.: Jour. Biol. Chem., 57:217, 1923.
28. Bischoff, F., Long, M. L., and Hill, E.: Jour. Biol. Chem., 90:321, 1931.
29. Mosso, A.: Archiv. ital. de biol., 42:192, 1904; also ibid, 43:216, 1905.
30. Haldane, J. B. S., and Priestley, J. G.: Jour. Physiol., 32:252, 1905.
31. Hill, L., and Flack, M.: Proc. Physiol. Soc., Jour. Physiol., 38:57, 1909.
32. Grant, S. B.: Amer. Jour. Physiol., 66:274, 1923.

33. Henderson, Y., and Haggard, H. W.: Jour. Biol. Chem., 33:333 and 355, 1918.

34. Collip, J. B., and Backus, P. L.: Amer. Jour. Physiol., 51:568, 1920.

35. Grant, S. B., and Goldman, A.: Amer. Jour. Physiol., 52:209, 1920.

36. Davies, H. W., Haldane, J. B. S., and Kennaway, E. L.: Jour. Physiol., 54:32, 1920.

37. Greenwald, I.: Jour. Biol. Chem., 54:285, 1922.

38. Morris, N.: Brit. Jour. Exper. Path., 3:101, 1922.

39. Kestner, O.: Ztschr. f. Biol., 70:95, 1919.

40. Barcroft, J., et al.: Phil. Trans. Roy. Soc., 211:352 and 455, 1922.

41. Hamilton, W. F., Barbour, H. C., and Loomis, N. M.: Jour. Physiol., 59:306, 1924-1925.

42. Erlanger, J.: Physiol. Rev., 1:177, 1921.

43. Barbour, H. G., et al.: Jour. Physiol., 59:300, 1924-1925.

44. Barbour, H. G., et al.: Amer. Jour. Physiol., 74:204, 1925.

45. Hodskins, N. B., Guthrie, R. H., and Maurison, J. Z., Amer. Jour. Psychiat., 11:623, 1932.

DISCUSSION

Samuel D. Ingham, M. D. (1253 Roosevelt Building, Los Angeles).—There is slow but definite progress in solving the problems of epilepsy, and what is more important, progress is being made in the obscure field of biochemistry. It has been fairly well established that varying concentrations of many different substances in the blood stream can be correlated with varying degrees of excitability in the central nervous system, and to a certain extent with the incidence of convulsions in those suffering from epilepsy. There is much evidence to indicate that the threshold for convulsions is lowered when the blood contains a low amount of diffusible calcium, sugar, and carbon dioxid. On the other hand, a high content of inorganic phosphorus and potassium likewise causes nervous irritability. A water balance in the tissues also appears to be a matter of importance. We have a rather vague conception of the existence of many other factors acting as so-called toxic agents, some of endogenous origin as indicated by the eclamptic and uremic states, and also exogenous substances of infinite variety. In general it may be stated that the whole problem resolves around the integrity and the functional activity of the nerve cells, singly or collectively, particularly as the cells are influenced each by its immediate environment, consisting of fluid derived from the blood containing varying amounts of many different chemical elements in varying combinations. The physical conditions influencing the functional activity of the cells include not only the chemical content of the fluid surrounding it, but the varying conditions of surface tension, electrolytic balance, colloid state, and other physical conditions. It will take a long time for science and research to correlate all of the facts that can now only be barely visualized. Doctor Hopkins' series of observations on epileptics who are given hyperpyrexia baths is another step in the direction of evaluating the changes induced by this procedure. No claim is made that it is a useful therapeutic measure, but valuable information may be obtained, especially in the way of diagnosis in cases of organic cerebral disease without manifest localizing symptoms. If by means of hyperpyrexia localizing symptoms of organic disease may be made manifest, the measure becomes an important diagnostic procedure in selected cases.

⁂

H. Douglas Eaton, M. D. (1136 West Sixth Street, Los Angeles).—Recent studies of epilepsy have not only added to our knowledge of the mechanism of convulsive seizures, but have provided us with practical aides in the treatment of this distressing disorder. Doctor Hopkins' excellent presentation of her painstaking observations on the physiological and chemical changes occurring in epileptics during hyperpyrexia baths is of definite value from the standpoint of etiology and diagnosis.

It is of interest to note that in spite of proved changes in water balance and in intracranial pressure, as well as the production of alkalosis and functional anoxemia, only 15 per cent of the baths produced seizures in a group described as showing well-defined and pronounced epileptic syndromes. These observations remind us again that we are still confronted with an unexplained and important factor in the genesis of convulsive seizures—the so-called convulsive tendency noted by Doctor Hopkins and other observers. The physiologic and chemical factors, such as alkalosis, anoxemia, and disturbances in water balance, act as excitants of this inherent latent hyperexcitability of the central nervous system. Further studies should yield us further practical help in the clinical handling of epileptics.

⁂

Thomas G. Inman, M. D. (2000 Van Ness Avenue, San Francisco).—In this paper the author presents the results of carefully conducted studies. The hyperpyrexia bath has enabled her to investigate the effects of temperature elevation in epileptics and to make such deductions from her findings as, in her experience, seemed warranted.

If the bath does nothing more in these cases than induce an attack in the presence of a trained observer, it would be a valuable aid to clinical investigation. Strange as it may seem, the physician seldom sees the convulsions he is called upon to treat; and since many convulsive attacks bear no relationship to epilepsy, the opportunity to observe a seizure may lead to a revision of opinion and point the way to curative therapy.

Epileptoid attacks can be induced in some individuals in a number of ways. It is a matter of clinical observation that certain individuals exhibit more or less mental disturbance, with increase in body temperature, and in children of the nervous type any febrile condition may be initiated by a convulsion. But this is not epilepsy.

In any consideration of the epilepsy problem it must be kept in mind that the generalized convulsion is but a motor cortex response to something which precedes it. Is it the unconsciousness, which seems to be an essential feature of the disease, or something initiated during that period that, acting through the circulation, sets the motor cells into action?

Or does the epileptic possess an easily excitable cerebral cortex, which occasionally reacts in this special manner to sudden variations, however induced, in circulatory balance? Epileptoid seizures can be brought about by inducing an arteriovenous capillary stasis, and it is not unlikely that this phenomenon is responsible for no small number of the secondary epilepsies. It is, however, not easy to explain the character of the epileptic and the numerous epileptic equivalents on these grounds.

Whatever the ultimate answer to the problem may be, Doctor Hopkins has added to the positive knowledge relating to the body chemistry of these unfortunates for which all interested are duly thankful.

⁂

Doctor Hopkins (Closing).—I am grateful for the comments made upon the subject material of the above paper. It becomes very evident that we are still dealing with surface phenomena, and have not penetrated far into the actual conditions developed within the central nervous system structures in preparation for convulsive reactions. The experimental and clinical methods in use today appear the more crude and ineffective when confronted with the necessity for understanding the mechanism of convulsions. We must ultimately know more about the individual cellular unit and the environmental conditions which influence its functional activity.

CARCINOMA OF THE COLON—FROM A ROENTGEN STANDPOINT*

By Carl B. Bowen, M. D.
Oakland

Discussion *by Kenneth S. Davis, Los Angeles; Robert R. Newell, M.D., San Francisco; Howard E. Ruggles, M.D., San Francisco.*

THE colon, including the rectum, is well known to be one of the commonest locations of malignancy. As the title states, we are only interested in the colon at this time. The comparative frequency of carcinoma in various segments of the colon is demonstrated by a small series of twenty-six pathologically proven cases collected over a period of five years at Highland Hospital in Oakland, California, in which there were three involving the cecum, two the ascending, four the transverse, four the descending, and thirteen the sigmoid. It is of interest that there have been seventy-four cases involving the rectum.

TECHNIQUE

In the consideration of carcinoma of the colon, the method of examination and technical procedures necessary are very important. They will only be briefly mentioned at this time.

The barium meal is of practically no value in the diagnosis of carcinoma of the colon, because of the irregular distribution of the meal throughout the lumen. The meal may be definitely contraindicated in that obstruction may be brought on by masses of barium becoming lodged at the level of a constricting lesion. Of course, in this instance, a barium meal, from the standpoint of diagnosis, would have definite value.

The barium enema is the most satisfactory of all examinations in the diagnosis of carcinoma of the colon, and the accuracy compares very favorably with the barium meal in the diagnosis of carcinoma of the stomach. Rankin, in his recent book on the colon and rectum, states:

> "Roentgenoscopic examination of the large bowel, whereby visualization is assisted by palpatory manipulation, now permits accurate localization and recognition of the pathologic type in more than 95 per cent of lesions of the large bowel. This advance has been largely due to the work of Dr. Harry M. Weber."

In reviewing the records of Highland Hospital, I find also a very high percentage of accuracy in the x-ray examination of proven cases of carcinoma of the colon, done by Dr. William Sargent.

As to the technical procedures involved, the preparation of the patient is most important. I am in the habit of advising an enema of warm water the night before the examination, and another, one and one-half to two hours before coming to the office in the morning. I stress the necessity of the enemata, how much water I wish them to take and how. Sometimes if enemata are inconvenient, I advise a cathartic the day before, with the patient limiting himself to a non-residue diet.

The barium enema should always be done under fluoroscopic control, with palpation of the abdomen while the fluid is going in. By this means a mass is sometimes felt at the site of some slight hesitation in the flow of the barium, which might otherwise be taken for transient spasm. Rotation of the patient, and placing the patient on the abdomen is in many cases necessary in order that overlapped loops of the colon may be separated, permitting visualization of all parts of the colon. This is particularly true in the recto-sigmoid region. At this point I would stress the importance of examination of the recto-sigmoid region with the sigmoidoscope, since probably more lesions are missed at this location than anywhere else in the colon, due to the overlapping of the coils of the colon at this level which cannot, in some cases, be satisfactorily separated by rotation of the patient.

Films, with the colon filled, are a necessity in that they verify fluoroscopic findings; or if not, they warn the roentgenologist that it might be well to look again. They occasionally also demonstrate questionable lesions, which were not noted in the fluoroscopic examination, and which should then be rechecked fluoroscopically.

Films following evacuation I find of great value, particularly in differentiating a questionable narrow annular carcinoma from spasm. If there is sufficient emptying in a case of spasm, the folds of mucous membrane will usually present a normal arrangement.

The air insufflation of the colon following evacuation of a barium enema, which has been prepared using considerable acacia in order that sufficient barium will adhere to the mucous membrane so that it can be readily visualized, has a very definite place in the examination of the colon, but probably not as a routine procedure. I believe that it has its greatest value in the visualization of pedunculated tumors, and in the case where there is overlapping of loops of the colon which cannot be separated by rotating the patient.

DIAGNOSIS

Diagnosis depends on the demonstration of a constant filling defect which, with suitable technique, should be demonstrable both in the fluoroscope and on the films. This may not be in evidence at all times during the examination due to overlapping of the coils of the intestine, or because of too great or too little filling.

The palpation of a mass in the region of the defect is corroborative evidence, and should be sought for. Occasionally the palpation of an unsuspected mass calls the attention to a small filling defect that might otherwise be taken for spasm or overlooked.

The disturbance in the regular arrangement of the mucosal folds in the partially emptied colon may point to an early carcinoma, or verify a suspected one.

The disturbance in peristalsis due to infiltration of the wall and the increase in the motility are findings which are suggestive of carcinoma particularly in the cecum and ascending colon; but they are by no means definitely diagnostic since tuberculosis can give a similar picture.

---

* Read before the joint meeting of Radiology and General Surgery Section of the California Medical Association at the sixty-second annual session, Del Monte, April 24-27, 1933.

The insufflation of the colon following evacuation of a barium enema may be the means of demonstrating an early carcinoma, or of confirming a questionable one. However, except in polyposis, this examination usually only gives additional weight to evidence already brought out.

DIFFERENTIAL DIAGNOSIS

In the differential diagnosis, spasm must be considered in all parts of the colon. Occasionally there may be a localized area of contraction which could be due either to spasm or a narrow annular carcinoma. However, in spasm there is usually some change in the constricted area during the fluoroscopic examination, or in the various films made.

If the constriction is present during the entire examination without any palpable mass, reëxamination following sufficient belladonna to give a physiological effect should be done. At this time, if the constriction is due to spasm, it will in all probability have disappeared or changed its shape.

Benign tumors of the colon are usually smooth in outline, in contradistinction to the irregularity of malignant lesions, and do not infiltrate the wall.

In the cecum and ascending colon, in addition to the lesions which have already been mentioned, deformity due to encapsulated appendicial abscess, hyperplastic tuberculosis, lymphosarcoma and actinomycosis, have to be considered.

In encapsulated appendicial abscess, the deformity of the cecum is usually smooth, and there is a boggy rather than a hard mass, as is found in carcinoma. Occasionally the deforming is irregular and is undistinguishable from carcinoma, except for the doughiness of the mass.

Hyperplastic tuberculosis frequently presents a more extensive involvement than carcinoma; it is usually smoother in outline and the mass is slightly less resistant; it is more likely to produce obstruction; and the patients are usually somewhat younger.

Lymphosarcoma is extremely rare in the colon. Its commonest location is in the cecum. It grows rapidly, is not very tender, and is usually less hard than carcinoma on palpation. It is stated that there is a tendency for the cecum to dilate, probably due to disturbance of the local nerve supply. Due to the rarity of the condition in this region and the fact that the differential diagnosis is not entirely clear cut, a preoperative diagnosis is seldom made. One case came to operation at Highland Hospital in the last five years. No roentgen examination was made.

Actinomycosis is very uncommon and presents no characteristic roentgen picture. A finding in differentiation which is mentioned and might be of value is that actinomycosis usually infiltrates the anterior abdominal wall, while carcinoma is more likely to involve the posterior wall.

In the transverse colon spasm, which has already been mentioned, is the chief condition which must be differentiated.

In the descending colon and sigmoid, spasm and inflammatory conditions must be differentiated from carcinoma since it is in this part of the colon that the narrow annular carcinoma is most commonly found. The differential points between spasm and annular carcinoma have already been mentioned. In the differentiation of inflammatory lesions which are not uncommon in the sigmoid, particularly in women (since the sigmoid is closely related to the pelvic organs and as a result may be involved in pelvic inflammatory masses), the shape of the deformity is one of the most valuable differential points. The deformity in inflammatory lesions is usually longer, and the infiltration of the wall more uniform than in carcinoma. Also where the inflammatory lesion is secondary to diverticulitis there will be in all probability typical diverticula scattered along the colon in this region. The palpable mass in inflammatory lesions is usually definitely boggy rather than hard, as in carcinoma. In ulcerative colitis, where the process is localized to a few inches of the colon, carcinoma might have to be differentiated, however, as in other inflammatory processes involving the colon the extent of the involvement is usually greater and the thickening of the wall more uniform than in carcinoma.

CONCLUSION

I would like to stress the definite value of early roentgenologic examination of all patients with any questionable bowel disturbance, since records show that the average patient with carcinoma of the colon has had definite signs, symptoms, or both, many months before presenting himself for roentgen-ray examination. The records of Highland Hospital show an average of eight months between the beginning of symptoms and the diagnosis. This plea bears the weight of evidence mentioned before, that the accuracy of the diagnosis of carcinoma by x-ray is very high in competent hands.

1624 Franklin Street.

DISCUSSION

Kenneth S. Davis, M. D. (Saint Vincent's Hospital, Los Angeles.)—Doctor Bowen has given a very good presentation of what is known and practiced in the roentgenographic diagnosis of carcinoma of the colon.

As the author stated, one cannot lay too much stress on the advantages of the barium enema over the motor meal in ruling out organic lesions of the colon. The latter is only indicated in those cases where there is a complete obstruction to the barium enema, and one wishes to know the extent of the lesion. Only a moderate amount of the barium should be given by mouth where there is any indication of obstruction.

As to the preparation of the patient I find that cleansing enemas do not completely evacuate the cecal contents, and that catharsis is indicated in the majority of cases.

The author has stressed the value of roentgenograms immediately after evacuation of the barium enema. I have found it extremely valuable to take a film twenty-four hours after evacuation, particularly when I was suspicious of multiple diverticula, or an incomplete obstruction.

The diagnostic radiographic signs of cancer of the colon are: (1) the filling defect; (2) the palpable mass corresponding to the filling defect; and (3) the evidence of obstruction to the barium enema.

In the differential diagnosis between carcinoma and tuberculosis of the colon, the latter has such a predilection for the ileocecal region that a lesion in this part, especially if associated with pulmonary tuberculosis, should make one suspicious of this disease. The chief roentgenographic characteristics of tuberculosis of the colon are (1) the marked spasm of the bowel and (2) the hypermotility of the barium through the area of involvement. The filling defect of a cancer is a constant one, whereas the filling defect of a tuberculosis is variable, depending on the degree of spasm at the time of the examination.

It is practically impossible to differentiate between a diverticulitis, with a large inflammatory mass, and a cancer, as the roentgenographic findings in the two conditions are almost identical. True, one may see diverticula present in other parts of the colon which should make one suspicious of an inflammatory rather than a malignant mass. We have had fourteen cases of this type at Saint Vincent's Hospital. Of this group, six had definite malignant changes and eight were purely inflammatory lesions. Whether the malignancy was a superimposed pathologic condition or was primary is a debatable question. However, from both the x-ray and surgical standpoint it should make no difference whether cancer is or is not present in the mass. The treatment is the same.

⁂

Robert R. Newell, M.D. (Stanford University School of Medicine, San Francisco). — Doctor Bowen has brought out some very important points which need to be understood by all physicians, that they may make the best use of roentgen consultation. The possibility of overlooking a tumor in the rectum by barium enema, when it is easy to be diagnosed by digital or sigmoidoscopic examinations, will bear reiteration.

I disagree with Doctor Bowen in regard to preparation for barium enema. Inasmuch as the colon almost always retains a large amount of barium enema for some hours, I am skeptical of its ability to empty itself of a cleansing enema. I would rather have the colon quite empty instead of full of water which will dilute the diagnostic enema. My own preference is for castor oil, two ounces the afternoon before, and then nothing more to eat (or only orange juice). The advantage of castor oil over other cathartics is its quick and rather violent action, coupled with a prompt removal of the irritant. What portion of the oil is not evacuated is absorbed like any other fat and removed from the bowel (resynthesized in the lacteals to the bland neutral fat). There will be many cases, of course, that cannot be given a cathartic with safety. This is just one more reason why the radiologist should be given at least a telephonic consultation before going ahead with the examination.

The x-ray apparatus makers provide a metal enema tip which I consider cruel. A rectal catheter of soft rubber is much more comfortable and stays in ordinarily quite well. For those who cannot retain an enema it is possible to buy enema tips of soft rubber provided with an external rubber bag which can be inflated after insertion through the anus.

I wish to stress the fact that inflammatory lesions originating in the appendix, diverticulitis, and even the female pelvic organs, can imitate a neoplastic obstruction in the colon.

It is not infrequently impossible for the surgeon to tell whether he is dealing with an infectious or a neoplastic development, even after he has opened the abdomen.

Hyperplastic tuberculosis is also sometimes impossible to distinguish from carcinoma, though often the local hyperactivity of the bowel, associated with tuberculosis, may afford differentiation.

One intrinsic bowel obstruction not neoplastic must also be mentioned, namely, intussusception.

In conclusion, I would go even further than Doctor Bowen. I think we must hold ourselves ever ready to do painstaking examination of the colon on even slight symptoms, especially because of the good results of early removal of carcinoma of the colon.

⁂

Howard E. Ruggles, M. D. (Fitzhugh Building, San Francisco).—Doctor Bowen has well emphasized the importance of a thorough, detailed examination in the diagnosis of carcinoma of the colon. Here, as elsewhere in the gastro-intestinal tract, early lesions are easily overlooked. Repeated examinations will not infrequently mean the saving of a patient's life as well as a professional reputation.

⁂

Doctor Bowen (Closing).—Both Doctor Newell and Doctor Davis have spoken in favor of cathartics rather than enemata as preparation for a barium enema. There is no doubt that the method is very thorough; however, the results may be disastrous in a complete or nearly complete obstruction which has not been suspected by the roentgenologist. In doing a barium enema, following cleansing enemata, if there has not been a complete cleansing of the colon, it will be quite evident. At the same time any obstruction will present itself. If there is no evidence of obstruction, a cathartic can then be given safely and the barium enema repeated.

Doctor Davis has mentioned in the differential diagnosis of carcinoma and tuberculosis of the colon (1) the frequency of tuberculosis in the ileocecal region; (2) that tuberculosis in the colon is frequently associated with pulmonary tuberculosis; (3) that there is marked spasm of the bowel in the region of the lesion; (4) that there is marked hypermotility of the barium through the involved area; and (5) that the deformity of cancer is constant and that of tuberculosis is variable. It is true that the above five points apply to ulcerative tuberculosis of the colon; however, in hyperplastic tuberculosis, in my opinion, only number one applies. Hyperplastic tuberculosis of the cecum is very frequently present without evidence of pulmonary tuberculosis. Some authorities consider it a primary lesion. In the small number of cases of hyperplastic tuberculosis I have seen, the deformity has been constant; there has been no hypermotility and no pulmonary tuberculosis.

There is one point which I did not mention in the paper and that has not been discussed—the fact that in the large percentage of cases hyperplastic tuberculosis occurs before forty years of age, while carcinoma of the colon usually appears after forty.

ACTINOMYCOSIS OF THE KIDNEY*

By Theodore S. Kimball, M. D.

and

Robert B. Haining, M. D.

Los Angeles

Discussion *by Verne C. Hunt, M. D., Los Angeles; Howard A. Ball, M. D., San Diego; Charles Pierre Mathé, M. D., San Francisco.*

TEN THOUSAND autopsies have been performed during the last fifteen years (1918-1933) at the Los Angeles County General Hospital. Of this number, five were proved cases of actinomycosis; only one of the five showed actinomycotic involvement of the kidney. Recently Cummings and Nelson [1] collected thirty-seven reports of renal actinomycosis from the literature. They concluded that only eleven of these gave evidence of "primary" assault upon the kidney.

Those who have reported cases of renal actinomycosis have usually attempted to define whether the lesion was primary or secondary. Such a distinction is specious. According to our present knowledge, primary actinomycosis of the kidney is inconceivable, if we mean by "primary" that the lesion originated in the kidney. This use of

---

* From the Pathology Laboratory of the Los Angeles County General Hospital.

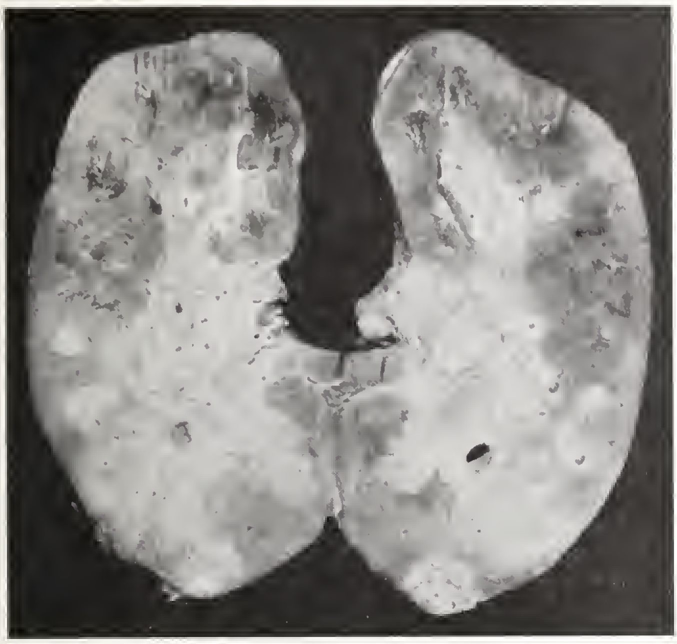


Fig. 1.—Actinomycosis of the kidney chiefly affecting lower pole.

the term is, therefore, unfortunate, and serves mainly to disguise our ignorance.

ACTINOMYCOSIS CONFINED TO THE KIDNEY

Recognizing the misnomer, Hunt and Mayo[2] suggest that the only justifiable way to retain the old terminology is arbitrarily to define primary renal actinomycosis to mean "actinomycosis confined to the kidney." This form of the disease, although rare, is definite enough to deserve special consideration. More commonly the kidney is involved secondarily by direct extension from the lung through the diaphragm, from the gastrointestinal tract, or by lymphatic or hematogenous metastasis from a demonstrable focus. At least eight cases are on record in which no primary site could be ascertained, and of these at least five showed a lesion which was so strictly "confined to the kidney" that complete recovery seemed to follow nephrectomy. In its susceptibility to surgical relief and in some other of its manifestations, this lesion is comparable with tuberculosis of the kidney.

In short, actinomycosis confined to the kidney has acquired importance, not by its frequency, but by its proved curability. It must be accorded respect as a clinical entity, and deserves an acceptable name. Israel was the first to report a case, and he described it as primary renal actinomycosis. In our opinion this is a misleading label, and it should be abandoned. "Actinomycosis confined to the kidney," while clumsier, is more explicit and more accurate.

METASTASIS OF RENAL ACTINOMYCOSIS

When actinomycosis "localizes" in the kidney, subsequent distant metastasis very rarely occurs. The percentage of successful nephrectomies (five out of seven, according to Hunt and Mayo[2]) testify eloquently to this observation. Indeed, we are unable to find in the literature a single report from which we can reasonably infer that metastases developed from a lesion which might previously have been described as "actinomycosis confined to the kidney." The present case seems to us to admit of no other interpretation than that it was at one time an example of actinomycosis confined to the kidney which went unsuspected for at least some months, and which later produced distant lesions by extension and hematogenous or lymphatic metastasis.

REPORT OF CASE

A white man, aged 38 years, in May, 1930, noticed severe pain in his right lower chest. The pain was made worse by deep inspiration. He was in bed three weeks with what his physician called influenzal pneumonia. Following this sickness, he gained weight slowly for three to four months.

In October he complained of a severe pain in the "upper left abdomen." This pain persisted for at least one month. About this time the patient began to lose weight and strength. He felt feverish at times, but there was no cough, no expectoration, no hemoptysis.

November 24.—He was awakened by a sense of suffocation. Next day he had a chill; his temperature was 102, and he was dyspneic. There was no cough nor expectoration. A pleuritic pain developed in the lower left chest.

November 30.—The patient was hospitalized, with a diagnosis of empyema. A rib resection was performed on the left side and a drainage tube inserted. Urinalysis at this time showed no albumin, no casts, no red blood cells; specific gravity 1025.

December 9.—The patient was admitted to the Los Angeles County General Hospital, complaining of chills, followed by profuse perspiration, extreme weakness, and shortness of breath. Physical examination revealed a temperature of 102, pulse 110, respiration 24, blood pressure 120/80. Both sides of the chest showed limited expansion. Foul purulent material was discharging from the thoracotomy wound on the left.

Laboratory report: Blood Wassermann, negative; blood culture, January 17, 1931, negative.

X-ray report of December 9, 1930: Chest—"Pleural sinus in the left lower thorax laterally, with markedly thickened parietal pleura, and with partial collapse of the lower lobe. Resection of the tenth rib posterolaterally, with drainage tube in this region. No free fluid shown. Pulmonary detail is rather hazy, but shows no definite parenchymatous infiltration except in the collapsed lower lobe."

December 3 to December 31.—The patient suffered frequent chills, followed by profuse perspiration. His afternoon temperature was 101 to 102.

December 31.—Another rib resection was performed in an attempt to secure more adequate drainage from the left pleural cavity. The attempt was successful, but the patient seemed to become steadily more septic.

January 16, 1931.—He developed an epididymitis on the left side, with induration of the cord as far as it could be palpated.

January 29.—He seemed to be losing ground rapidly, and was given a blood transfusion.

February 2, 1931.—The patient died.

Clinical Diagnosis.—The clinical diagnosis was bilateral empyema, cause undetermined, with contributory pyemia, hypostatic pneumonia, and septic epididymitis.

AUTOPSY

The only significant findings were in the thoracic cavity and the genito-urinary system.

Pleural Cavities.—On the left, at the level of the ninth and tenth ribs (both of which had been removed), was a walled-off cavity lined with fibrinous exudate, containing no free fluid. The left lung was markedly adherent to the upper surface of the diaphragm, but the diaphragm was not perforated.

Lungs.—The lung tissue subjacent to the abovementioned cavity showed marked infiltration to the extent of abscess formation for a depth of two to three centimeters. The remaining portion of lung tissue on the left side was free from gross evidence of pathology.

The right lung contained eight or ten discrete abscesses, the largest measuring two centimeters in diameter, each filled with green viscid purulent exudate. There was no other demonstrable lesion.

Kidneys.—The left kidney weighed 175 grams, and was practically surrounded by a pocket of greenish purulent material which was most profuse at the lower pole and around the pelvis. The outer surface of the kidney was greatly roughened. Section revealed a grossly mottled appearance not unlike that seen in pyelonephritis, except that around each of the abscess cavities there was what appeared to be a yellowish caseous membrane which gave to the entire process a semblance of chronicity. A large amount of greenish pus could be expressed from the substance of the kidney, indicating the presence of communicating abscess cavities.

The pus-filled space surrounding the left kidney was followed downward over the psoas muscle into the pelvis, and along the spermatic cord as far as the epididymis. The testicle had not been penetrated.

The right kidney was slightly enlarged, but showed no other pathologic change.

Postmortem Blood Culture.—From the heart, showed the presence of *Staphylococcus aureus.*

Smears.—From the left lung, showed Gram-positive cocci in small clumps resembling staphylococci. From the abscesses of the right lung, failed to reveal any organisms whatsoever.

Stained Smears. — From the left kidney, showed thread-like organisms with a distinctly granular appearance occurring in dense clumps suggestive of actinomycosis. A direct, unstained smear of the purulent material revealed the typical ray fungus.

MICROSCOPIC DIAGNOSIS

Left kidney: Multiple abscess formation, with nearly complete destruction of the renal parenchyma. In the center of each abscess is found a clump of organisms having the typical morphology and staining characteristics of actinomyces bovis. Some areas show the communication that exists between the various abscesses.

Right lung: Actinomycotic organisms found in all the abscess cavities.

Left lung: Several sections from the abscessed area show destruction of lung tissue having a totally different appearance from the abscesses of the right lung. No actinomyces are seen in any section.

Spermatic cord: These sections show a sinus tract in the connective tissue filled with purulent material containing an occasional clump of actinomyces. Routine sections of other organs reveal nothing of interest.

ANATOMICAL DIAGNOSIS

1. Actinomycosis of the left kidney with perinephric abscess extending down to the spermatic cord and along the cord as far as the epididymis.
2. Multiple actinomycotic abscesses of the right lung.
3. Old empyema of the left pleural cavity.
4. Staphylococcic abscess of the left lung.

COMMENT

Actinomycotic lesions were found in the left kidney and the right lung. Which took precedence?

The most convincing evidence is in the x-ray films made two months before death. If the multiple abscesses found at autopsy had been present at this time, suggestive shadows would surely have been noted in the films. No such shadows were found. It seems fair to conclude that the actinomycotic organisms reached the lung less than two months antemortem.

We have no exact method of measuring the duration of the kidney lesion, but such extensive involvement occurring within two months would contradict recorded experience with renal actinomycosis. In all probability the first attack upon the kidney took place several months, possibly a few years, before the victim died.

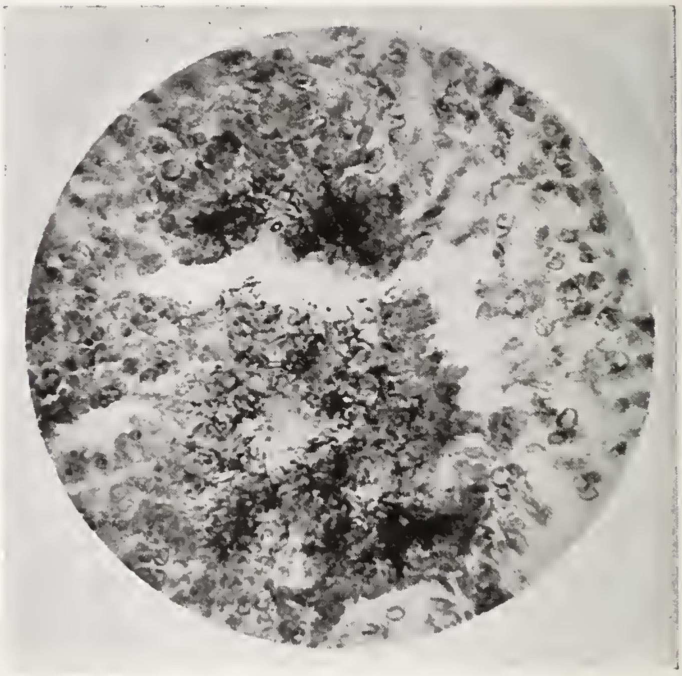


Fig. 2.—Photomicrograph, showing actinomycotic organisms. (Gram-Weigert stain.)

Moreover, actinomycosis, when it affects the lungs "primarily," tends to produce a large solitary abscess. The finding of eight or ten small discrete abscesses argues strongly for an actinomycotic pyemia, and in this case the source of the pyemia was probably the left kidney abscess or its extension along the spermatic cord.

Therefore, it seems reasonable to believe that until about one month before the man died (extension to the epididymis was noted in January, and the patient died in February), this was a case of actinomycosis confined to the kidney. It is idle to speculate whether there was a time when diagnosis and surgical interference might have saved the patient, but it is clear that, if unrecognized or recognized too late, actinomycosis confined to the kidney may break its confines by extension and distant metastasis.

In this instance the only recorded clinical evidence which might have led to a careful investigation of the left kidney was the left-sided, upper abdominal pain lasting over a month. However, the chest findings bulked so large that the kidneys were never brought under suspicion, adequate laboratory investigations were not made, and the autopsy revelations were a complete surprise. Probably other cases of actinomycosis confined to the kidney have been obscured by the presence of wholly unrelated conditions, and, failing autopsy, have escaped detection.

From a study of this case it appears that actinomycosis confined to the kidney may be a very modest intruder. It may remain practically symptomless even when a large portion of the kidney is involved. Of course, this patient's intrathoracic difficulties absorbed most of his attention, and unfortunately most of his attendants' attention also. Nevertheless, we must believe that symptoms referable to the kidney never bothered the man a great deal, in spite of the fact that his left kidney was extensively invaded probably months before death.

We have reinvestigated the past history carefully by questioning members of the family. There is no evidence of preëxisting actinomycosis or of exceptional animal contacts.

In the absence of suggestive history, the diagnosis of renal actinomycosis has been made by pyelographic indications of renal tumor (three cases), by demonstration of actinomyces in urine (two cases), and by discovery of the fungus in postoperative sinuses.

When it can be shown that actinomycosis is confined to one kidney, the prognosis is quite hopeful if nephrectomy can be performed. Supplementary measures of attested value are chiefly the administration of iodides locally and systemically, the use of radium in the wound, and of roentgen rays over the wound area.

CONCLUSIONS

Actinomycosis confined to the kidney is a rare but definite clinical entity of proved surgical curability. Primary renal actinomycosis is a term with inaccurate connotations, and should be abandoned.

When actinomycosis localizes in a kidney, subsequent metastases are very rare. The present case demonstrates that, if unrecognized or recognized too late, actinomycosis may break its confines by extension and blood-stream metastasis.

Without significant history or recognizable primary lesions, the diagnosis of renal actinomycosis may be extremely difficult. Even when the parenchyma of one kidney is almost completely destroyed, the victim may have very few suggestive complaints.

1100 Mission Road.

REFERENCES

1. Cummings, R. E., and Nelson, R. T.: Actinomycosis of the Urinary Tract, Surg., Gynec., and Obst., 49:342-361 (Sept.), 1929.

2. Hunt, V. C., and Mayo, C., Jr.: Renal Actinomycosis, Annals of Surgery, 93:501-505 (Feb.), 1931.

3. Polayes, S. H., and Lederer, M.: Case of Actinomycosis of the Kidney, Jour. of Urol., 23:393-396 (March), 1930.

4. Recht, H.: Further Knowledge of Isolated Renal Actinomycosis, Deutsche Ztschr. f. Chir., 224:414-417, 1930.

5. Racic, T.: Isolated Actinomycosis of the Kidney, Beitr. z. path. Anat. u. z. allg. Path., 87:474-480 (June 27), 1931.

DISCUSSION

Verne C. Hunt, M. D. (727 W. Seventh Street, Los Angeles).—The case herein reported is most worthy of recording in the literature. The authors have stated quite properly that renal actinomycosis must of necessity have its origin, or primary focus of infection, outside the kidney; that primary renal actinomycosis is entirely a misnomer unless the interpretation is made that, in speaking of primary renal actinomycosis, the kidney proves to be the only site in the body harboring an actinomycotic lesion. If such interpretation of the term is made in this particular case, it may hardly be considered one of true primary renal actinomycosis. The authors have raised the question as to whether the actinomycotic infection occurred first in the left kidney or right lung. The lungs provide the portal of entry for actinomycosis in a fair percentage of instances, and inasmuch as the pulmonary symptoms and findings in the case reported predominated from the onset of the illness to death, and that there were no urinary findings as late as five months following the onset of the illness, and that findings referable to the left urinary tract did not occur until the last month before death, leads me to the opinion that the infection may have occurred first in the lung.

In 1929 I did a nephrectomy for renal actinomycosis, following which the patient made a complete recovery. The case was reported in 1930 as one of primary renal actinomycosis, inasmuch as there was no clinical evidence of actinomycosis elsewhere. At that time it was possible to find in the literature only eleven cases of renal actinomycosis which might be considered as primary in the kidney. However, after careful review of these cases, only five could be accepted as true primary renal actinomycosis in that actinomycosis did not exist elsewhere in the body. It is of interest that in only six of the eleven cases was nephrectomy done. Recovery occurred in only four of the eleven cases. The kidney becomes involved in only a small percentage of cases of actinomycosis of the thorax and abdomen. Pinner has stated that in 460 cases of actinomycosis of the thorax and abdomen there were sixteen in which the kidney was involved secondarily. Von Lichtenberg has stated that secondary actinomycosis of the kidney occurred in nine of the 128 fatal cases of actinomycosis in which necropsy had been done, an incidence of seven per cent.

*

Howard A. Ball, M. D. (4643 El Cerrito Drive, San Diego).—Unique cases of this sort are valuable when recorded for study.

The authors make no comment on the rather prolonged disability resulting from the respiratory infection which antedated the abdominal trouble. From my knowledge of the chain of events in some other fungus diseases, I am inclined to feel that this history is significant. In coccidioidal granuloma, for instance, it is clear that most patients gain the infection through the respiratory system. The same was true in a personal case of generalized monilia infection. Involvement of the kidney with actinomycosis is almost certainly by hematogenous spread; and the most likely access to the blood stream is through the lungs. We know, however, that actinomycosis may involve the intestinal tract, and the natural assumption is that it follows ingestion of the organism. The lack of intestinal lesions in this case makes such an entrance unlikely. The failure to find pathology in the lungs on x-ray examination, however, does not preclude the entrance of the organism by this route. In cases of coccidioidal granuloma, at least, the primary assault on the lungs is healed as far as x-ray evidence goes, usually before the disease manifests itself systemically.

A practical point which this case exemplifies is the probable failure of anyone to carefully inspect the pus from the chest sinus. Granules typical of the disease are discharged from such sinuses constantly. The laboratory workers who handled the pus for other examinations are no more excusable for lack of careful inspection than the clinicians.

*

Charles Pierre Mathé, M. D. (450 Sutter Street, San Francisco).—It is well that, from time to time, rare pathological conditions of the kidney are called to our attention, otherwise their existence might be forgotten. Doctors Kimball and Haining, in reporting their case of actinomycosis of the kidney, have reminded us of a definite clinical entity actinomycosis confined to the kidney. This is a rare surgical disorder, often confined to one kidney, that can be relieved by early drainage or nephrectomy.

On account of the extreme rarity of this condition, it is highly probable that many of us, even those working in large urological services, will not encounter a case in a lifetime; however, the possibility of its occurrence should never be overlooked. In reviewing the literature on the subject, I was impressed by the fact that, in many cases suffering from suppuration of the kidney produced by actinomycosis, there was often an accompanying suppurative or nonsuppurative perinephritis. Most of the cases reported presented persistent fever, leucocytosis, pain and tenderness in the lumbar region or upper abdominal quadrant, with a relative paucity of positive urine findings, etc.; signs and symptoms that, if carefully analyzed, should point the way to the diagnosis of suppuration confined to the cortex of the kidney or in the perirenal tissues. This accompanying perinephritis can be detected by a sign that I have described in a number of papers published by me on renal mobility, perinephritis, etc. This sign consists of lack of renal mobility, due to fixation of the kidney, which is easily ascertained by making an intravenous or retrograde pyelogram in the vertical posture, and which is of great importance in determining cortical abscess formation of the kidney as well as suppurative and nonsuppurative perinephritis.

In the essayists' case, the predominance of thoracic signs and symptoms overshadowed those produced by the actinomycotic renal and perirenal suppuration, and in that manner the attending physician's attention was detracted from the kidney region and abdomen. It is reasonable to assume that in their case the extensive suppurative perinephritis extending from the renal fossa down into the bony pelvis must have caused certain rather definite signs that usually accompany these lesions. I wish to emphasize the importance of making a complete urological investigation in cases in which the signs and symptoms lead one to suspect suppuration of the kidney, or of the perinephritic tissues. We are indeed grateful to Doctors Kimball and Haining who, in reporting their case of actinomycosis of the kidney, have called our attention to the fact that suppurative processes of the kidney might be caused by actinomycosis which, if detected early, can be relieved by surgical intervention.

CLINICAL TETANUS*

A STUDY OF ONE HUNDRED AND THIRTY-ONE CASES

By Hyman I. Vener, M. D.
A. G. Bower, M. D.
and
J. E. McKillop, M. D.†
Los Angeles

Discussion *by Willard J. Stone, M. D., Pasadena; Louis H. Jackson, M. D., West Los Angeles; Burrell O. Raulston, M. D., Los Angeles.*

II‡

IT IS interesting to note that in the female group the mortality rate in cases with an incubation period of five days or less was extremely high, being 85.7 per cent. (See Tables 10 and 11.)

ETIOLOGIC FACTORS—SITES AND MORTALITY

Wishing to note the relationship of the various etiologic factors to the mortality rate, and whether any single injury received was more unfavorable than another, Table 12 is submitted.

From this table it may be noted that compound fractures with infection give the highest mortality rate, 100 per cent; automobile accidents, 75 per cent; postoperative, the third highest, with 71.4 per cent; while that of the three greatest causative factors, splinters, puncture wounds, abrasions, and lacerations, an approximate combined mortality of 58.5 per cent.

Table 10.—*Incubation Period Among Males.*

Number Days Incubation	Number of Cases	Deaths	Recoveries	Per Cent Mortality
1- 5	10	5	5	50.
5-10	37	22	15	59.4
10-15	18	9	9	50
15-20	6	3	3	50
20-25	3	0	3	0
25-30	3	3	0	100
Unknown..	19	7	12	36.8

In Table 13 may be seen the relations between the mortality rate and the site of trauma.

In this table note the mortality rate of tetanus due to injury of the face, as contrasted with injury at other sites. Although only three such cases are included in this series, it would seem to disprove the old teaching that face injuries are uniformly fatal. Another fact obtained from this table is that tetanus originating from sites closest to the trunk in either arm or leg shows a higher rate; for example, leg injuries 72.7 per cent; foot 52.1 per cent. Clinical cases developing from trauma of the forearm have a mortality rate of 66.6 per cent, of the hand 57.5 per cent. Interesting to note is the postoperative mortality rate following surgery on the uterus, of 100 per cent—three cases and three deaths.

A very striking contrast is presented in Table 14 compiled on this relationship. Of those dying within three days after admission, 56.3 per cent died within the first twenty-four hours, and the other 43.7 per cent within the next forty-eight hours. Of these, four received no serum at all, dying before any help whatever could be administered. From the third to the sixth day the mortality rate was 85.7 per cent, and from the sixth to the ninth day, 71.4 per cent. Therefore, the average mortality rate of patients dying between the third and the ninth day period of hospitalization was 78.5 per cent.

Beginning with the ninth day of hospitalization, there was a sharp decline in death rate, it being only 10 per cent for all cases from the ninth to the eighteenth day; and only 5.8 per cent for all cases from the eighteenth to the twenty-seventh

Table 11.—*Incubation Period Among Females.*

Number Days Incubation	Number of Cases	Deaths	Recoveries	Per Cent Mortality
1- 5	7	6	1	85.7
5-10	10	6	4	60
10-15	1	0	1	0
15-20	2	1	1	50
20-25	1	0	1	0
25-30	1	1	0	100
Unknown.	13	8	5	61.5

---

* From the contagious department of the Los Angeles County General Hospital, Unit No. 1. Service of Doctors McKillop and Bower.

† Dr. J. E. McKillop died on July 25, 1932.

‡ Part I of this paper was printed in November California and Western Medicine, page 309.

TABLE 12.—*Relation to Special Injuries.*

Etiologic Factor	Number of Cases	Deaths	Recoveries	Per Cent Mortality
Puncture wound	46	27	19	58.7
Abrasions and lacerations	23	12	11	52.1
Splinters	17	11	6	64.6
Crushing injury	5	2	3	40
Postoperative	7	5	2	71.4
Compound fracture with infection	3	3	0	100
Gunshot wound	2	1	1	50
Auto accident	4	3	1	75
Stone	3	0	3	0
Glass	2	0	2	0
Harpoon	1	1	0	100
Fish hook	1	0	1	0
Unknown	17	9	8	52.9

day. *It becomes obvious that if patients can be kept alive for nine days, they have at least a 90 per cent chance of recovery.*

Comments on Patients Who Died.—An analysis of the four patients who died after a longer period than nine days of hospitalization follows:

CASE 1.—Surgical patient. Osteomyelitis of the hip. Operated on twentieth day after admission. Seventeen days later, or thirty-seven days after first admission, patient first developed tetanus, dying within twenty-four hours after onset of symptoms, despite 25,000 units of antitoxin.

* * *

CASE 2.—This patient received 125,000 units of antitoxin the first six days in the hospital. He died on the twenty-eighth day, and postmortem examination showed him to have died of tuberculosis of the lungs, prostate, and epididymis, having recovered from his tetanus.

* * *

CASE 3.—In the hospital twenty days. Was being treated for tetanus, following crushing injury of his fingers; and had had an amputation done by a private physician. While on our service he showed marked improvement after he had received 205,000 units of antitoxin, but died suddenly of anaphylactic shock while being given some antitoxin intravenously, after an elapsed period of six days during which interval he had received no serum.

TABLE 13.—*Sites in Relation to Mortality Rates.*

Site of Injury	Number of Cases	Deaths	Recov-eries	Per Cent Mor-tality
Foot	69	36	33	52.1
Hand	17	10	7	57.5
Leg	11	8	3	72.7
Forearm	3	2	1	66.6
Face	3	1	2	33.3
Umbilicus	2	1	1	50
Back	2	2	0	100
Unknown	17	7	10	41.1
Postoperative: Uterus	3	3	0	100
Resection femur	1	1	0	100
Appendix	1	0	1	0
Hernia	1	0	1	0
Teeth	1	0	1	0

TABLE 14.—*Hospital Residence and Mortality Rates.*

Total Days in Hospital	Number of Cases	Deaths	Recov-eries	Per Cent Mor-tality
Less than 24 hours	31	31	0	100
1- 3 days	24	24	0	100
3- 6 days	7	6	1	85.7
6- 9 days	7	5	2	71.4
9-12 days	10	1	9	10
12-15 days	9	0	9	0
15-18 days	3	0	3	0
18-21 days	17	1	16	5.8
21-24 days	5	0	5	0
24-27 days	2	0	2	0
27-30 days	8	1	7	12.5
30-34 days	3	1	2	33.3
60 days	3	0	3	0

* * *

CASE 4.—In the hospital ten days with a compound fracture of the forearm. Six days after admission he developed gangrene of the right forearm, which re-

TABLE 15.—*Antitoxin Dosage.*

Initial Dose Given Up to Units	Deaths	Recov-eries	Per Cent Mortality
25,000 or less	16	19	45.7
25,000-50,000	25	17	59.5
50,000-75,000	20	19	51.2
75,000-100,000	5	6	45.4

Table 16.—*Antitoxin Therapy and End Results.*

Total Units Tetanus Antitoxin up to	Number of Cases	Deaths	Recoveries	Per Cent Mortality	Number Cases Receiving Only Initial Dose
25,000 or less	11	10	1	91.9	6
25,000-50,000	20	15	5	75	7
50,000-75,000	19	15	4	78	11
75,000-100,000	14	9	5	64.2	5
100,000-125,000	16	8	8	50	0
125,000-150,000	8	4	4	50	0
150,000-175,000	5	1	4	20	0
175,000-200,000	3	2	1	66.6	0
200,000-225,000	8	2	6	25	0
225,000-250,000	3	0	3	0	0
250,000-275,000	6	1	5	16	0
275,000-300,000	6	0	6	0	0
300,000-350,000	5	2	3	40	0
350,000-400,000	2	0	2	0	0
400,000-425,000	1	0	1	0	0
425,000-500,000	0	0	0	0	0
500,000-575,000	1	0	1	0	0

quired amputation. Following surgery he developed tetanus on the fourth postoperative day, and died quickly without receiving specific treatment.

Discounting these four cases, it may be stated that all uncomplicated tetanus patients who were in the hospital longer than nine days recovered. From this fact it should be the endeavor to keep patients alive for a period of at least nine days by all possible means, forcing the maximum dosage of serum in a minimum length of time.

RELATIONSHIP OF TETANUS ANTITOXIN TO MORTALITY

This analysis will not include the thirty-one patients who were moribund upon admittance.

Beginning in 1924, larger initial doses of antitoxin were administered by the various routes, averaging 60,472 units per case, whereas prior to this period the average was but 27,316 units.

Table 15 shows that, regardless of dosages up to 100,000 units as initial treatment, we are faced with a handicap of a mortality rate of approximately 50 per cent from the beginning.

Note the sharp decline in the death rate when a minimum amount of approximately 200,000 units of serum was used. (Table 16.)

In sixty-four cases receiving up to 100,000 units of antitoxin there were forty-nine deaths and fifteen recoveries, a mortality rate of 76.5 per cent.

Table 17.—*How Antitoxin Was Administered.*

Year	Number of Cases	Total Serum Intraspinally	Total Serum Intravenously	Total Serum Intramuscularly	Total Serum Intraperitoneally (p) or Cisternally (c)	Total Serum Used by All Routes
1916	1	26,000	22,000	3,000		51,000
1917	2	3,000	55,000	2,500		83,000
1918	1	6,000	66,000	1,500		73,500
1919	13	143,500	158,000	224,300		525,800
1920	8	251,500	454,000	405,500		1,075,000
1921	9	27,000	613,000	121,000		1,004,000
1922	8	245,000	409,500	189,000		843,500
1923	13	457,000	999,500	343,000		1,805,500
1924	9	465,000	825,000	241,000	(p) 403,000	1,531,000
1925	11	610,000	345,000	396,000		1,754,000
1926	10	515,000	614,000	448,000		1,577,000
1927	7	370,000	410,000	541,000		1,321,000
1928	14	458,500	268,000	871,500		1,598,000
1929	17	827,000	646,000	1,734,500	(c) 18,000	3,225,500
1930 (6 mo.)	3	60.000	175,000	125,000	(c) 105,000	465,000

Table 18.—*Comparisons of Results on the Two Services.*

Period	Number of Cases	Deaths	Recoveries	Died in 72 Hours	Died from Wounds or Conditions not Related to Tetanus	Died Later from Tetanus
8 years (general medical service) 1916 to 1924	56	32	24	22	0	10
6 years (special service) 1924 to 1930	75	38	37	33	4	1

Of these deaths twenty-seven received only one treatment and four received none, leaving thirty-three cases treated more than once. In the latter the mortality was eighteen deaths with fifteen recoveries, a death rate of 54.5 per cent in those treated more than once.

Of the thirty-two cases receiving between 100,000 and 200,000 units of antitoxin, all were treated more than once. There were fifteen deaths and seventeen recoveries, a mortality rate of 46.8 per cent.

Of the twenty-three cases that were treated with dosages between 200,000 and 300,000 units, there were three deaths and twenty-five recoveries, a mortality rate of 13 per cent. When 300,000 to 400,000 units were administered, there were seven cases with two deaths and five recoveries, or a mortality rate of 28.5 per cent.

In summing up the above findings we note that when over 200,000 units of antitoxin were administered, the mortality was only 15.6 per cent, or a decline of approximately 35 per cent in the death rate, as compared with smaller doses that were given.

In Table 17 an attempt has been made to determine the amount of serum given each year by the respective routes. All serum given into the tissues about the site of injury has been considered as intramuscular therapy.

In studying this series it was found that four patients had received the prophylactic dose of 1,500 units following injury, and later developed tetanus. Of this number there were three deaths and one recovery. Two of these patients received 1,500 units within twenty-four hours after injury, and the third within four days. The one patient who recovered received the antitoxin two days following injury.

COMPARISONS

An analysis of the eight years on the general medical wards as against those of six years in which all patients were cared for on one service follows. The general supportive treatment was much the same for both periods, as was the specific treatment, with the notable exception that during the past few years larger doses of antitoxin were given, and the initial dosage at present averages 90,000 units, given intrathecally, intravenously, and intramuscularly, 30,000 units each. We believe that further experience will probably cause us to increase the size of these doses.

All cases dying within seventy-two hours after admission to the hospital should not be listed with any analysis of treatment and, therefore, these cases will be deducted from both sets of figures because in every instance they were practically moribund and had no hope of recovery. They had either not been treated at all or else treatment was totally inadequate and they were dying on admission.

Therefore, in the period 1916 to 1924 there were thirty-four cases actually treated and ten deaths, or a mortality rate of 29.4 per cent, which when considered with the general rates of treated tetanus, is an excellent record. These cases averaged about 81,000 units.

In the period 1924 to 1930 cases averaged about twice the above dosage, and *there were thirty-eight treated cases with one death, or a mortality rate of 2.6 per cent.* Compare this with 86.8 to 95.2 per cent, the mortality figures existing during the Civil War period. As late as 1906 the average death rate was 83.1 per cent.

This death rate of less than 3 per cent, when large doses of antitetanic serum were used, when compared to cases treated with only a moderate amount of serum in which ten times the death rate was observed (or about 30 per cent), is such a marked difference that the employment of much larger doses of serum dare not be ruled out without further careful study.

SUMMARY AND CONCLUSIONS

1. If every case of tetanus admitted to the hospital be considered, only a diminution of 5.1 per cent in the death rate was noted when all patients were required to be segregated for treatment on one service, as contrasted with the figures obtained during the former practice of sending them to any of the various medical wards. However, if all patients dying within seventy-two hours after en-

Table 19.—*Antitoxin Dosage and Mortality.*

Period	Approximate Dosage	Cases Treated	Recoveries	Died	Mortality Rate
Years 1916 to 1924	81,000	34	24	10	29.4%
1924 to 1930	161,000	38	37	1	2.6%

trance into the hospital be deducted, we note a pronounced factor in favor of having all patients treated on one service, for this method gave only one-tenth the death rate observed under the former plan.

2. Incidence is three times as great in the male sex as in the females, but the mortality rate is approximately 13 per cent lower.

3. Puncture wounds were the greatest contributing factor, followed by abrasions and lacerations. The high incidence due to splinters is noteworthy. The foot was the commonest site of injury, and then the hand.

4. Postoperative tetanus following procedures on the uterus, and compound fractures with infection have the highest mortality rate. Splinters, puncture wounds, and lacerations follow in the order named. Tetanus about the face had a lower death rate than of the extremities. Tetanus originating in the proximal parts of an extremity was more fatal than that in the distal portions.

5. The greatest number of cases occur in the first fifteen years of life, and most of these between the ages of five to ten years.

6. Tetanus has increased approximately 42 per cent in the past five years, and the growth in population explains this only to a slight degree.

7. The mortality rate averaged about 50 per cent for the first twenty years of age, and 100 per cent for patients above the age of sixty.

8. The greatest number of patients had an incubation period of five to ten days, then ten to fifteen, with no definite relationship between the mortality rate and the incubation period; the mortality rate being approximately 58 per cent for the first twenty days.

9. Fifty-five patients dying in the first three days were not affected by the amount of serum given, and fifty-six per cent of these died within twenty-four hours after admittance.

10. After three days in the hospital there was a gradual decline in the mortality rate up to the ninth day. After the ninth day the mortality rate was reduced 68.5 per cent. The mortality rate was only 10 per cent for cases in the hospital from the ninth to the eighteenth day for all cases.

11. After the contagious unit started using twice as much antitoxin as an initial dose, the mortality rate of 29.4 per cent was altered to only 2.6 per cent.

12. The mortality rate was 54.5 per cent for all patients treated more than once, up to 100,000 units of serum being used; 46.8 per cent up to 200,000 units of serum; 13 per cent up to 300,000 units; and 28.5 per cent up to 400,000.

13. Of sixty-five patients treated more than once, with dosages as high as 200,000 units of antitoxin, the mortality rate was 50.7 per cent; while in thirty-two patients who received more than 200,000 units the mortality rate was 15.6 per cent, or a decrease of approximately 35 per cent.

14. The contagious unit used an approximate average of 161,000 units of antitoxin per case, as compared with approximately 81,000 units formerly used by the several general medical wards, with only a decrease in the mortality rate of about 5.1 per cent when all cases admitted, including those semimoribund, were counted. However, if cases dying in the first seventy-two hours be not included, then the contrast in the mortality rate is striking indeed.

COMMENT

1. Keep all cases of tetanus alive by all means at our command for at least three days, and if possible for nine days, after which time the mortality rate is minimum.

2. Statistics compiled from this paper tend to prove that if antitoxin is to be of any value it must be given early and in massive doses of not less than 90,000 units within the first twelve hours, and a variable dosage repeated again within the following twenty-four hours.

3. Doses up to 100,000 units as an initial treatment do not materially affect the mortality rate within the first seventy-two hours, and probably further experience will cause us to give much larger doses during this period.

4. At the present time practitioners of medicine face a 50 per cent mortality when initiating the treatment of a tetanus case, because no standards have been established concerning the amount of antitoxin to be given in order to effect a cure and lower the mortality rate.

5. Due to lack of prophylaxis, tetanus is more prevalent than thought to be by the individual practitioner, probably due to misjudging the serious consequences of neglecting a rather trifling injury.

6. The usual prophylactic dose of 1,500 units does not always protect, and judgment should be exercised in repeating or increasing the dose if the injury warrants.

7. The future mortality rate of tetanus will depend largely upon accurate and adequate statistics compiled by various institutions where such cases are treated by the administration of maximum amounts of antitoxin in the shortest possible period of time.

1531 Purdue Avenue, West Los Angeles.

DISCUSSION

Willard J. Stone, M. D. (65 North Madison Avenue, Pasadena).—Doctor Vener has added to our knowledge by his careful survey of conditions which may lead to infection with the tetanus bacillus and the treatment with large doses of antitoxin in the Los Angeles General Hospital. My interest in the subject has not lessened since a corresponding survey was made of forty-nine cases of tetanus treated in the Los Angeles General Hospital and reported in the *Journal of the American Medical Association* June 24, 1922. At that time it was advocated that larger doses of antitoxin should be used than had formerly been considered necessary in the treatment of this infection. We had apparently been able to reduce the mortality through the use of doses of antitoxin approximating 125,000 to 150,000 units. Doctor Vener has gone further and has advocated doses which may total 250,000 or 300,000 units. There is every reason to believe, in many cases of tetanus, that successful treatment depends upon the larger doses of antitoxin used, since the outcome depends upon the neutralization of toxin present in the body. Since we have no way of knowing the amount of toxin already formed, or being elaborated in the infected patient, it appears logical, if any mistake of judgment is to be made, to err on the side of safety and use larger doses of antitoxin than have heretofore been considered necessary. This is especially true in the first twelve hours of treatment, when doses to be efficient should approximate 100,000 units or more. As emphasized by Doctor Vener, the patient faces a mortality possibility of 50 per cent upon the earliest clinical evidences of the disease. Such a handicap should impress physicians that in the treatment of tetanus halfway measures do not suffice. The expense of antitoxin may be a large factor for some patients. Three hundred thousand units of antitoxin, with a 10 per cent reduction given by the pharmacist for the large quantities used, will cost the patient approximately $300. The cost for 300,000 units with the 40 per cent discount to hospitals will be about $200. The increase in the incidence of the disease as seen in a large general hospital has been emphasized by Doctor Vener. This is undoubtedly due to the increasing number of automobile accidents. It is fortunate, since tetanus spores are not infrequently present in the intestines, that tetanus does not occur as a postoperative complication more frequently. One patient in my experience died of tetanus following a simple hemorrhoidectomy. Doctor Vener's series showed seven postoperative cases. Compound fractures with infection apparently give the highest mortality rate. In Doctor Vener's series of 131 tetanus cases only four patients had received prophylactic doses of 1,500 units of antitoxin. Three of these four patients died of tetanus. I have long believed that it would be better to give 2,000 units for prophylaxis and have urged manufacturers to increase the size of the prophylactic package to 2,000 units. *It should be emphasized that in any persistent infection, even though the patient has had a prophylactic dose of antitoxin, should a secondary operation be necessary, such as the amputation later of a leg, hand or finger, the prophylactic dose of antitoxin should be repeated prior to the contemplated operation. This is especially true if a period of two or three weeks has elapsed.*

⁂

Louis H. Jackson, M. D. (1531 Purdue Avenue, West Los Angeles).—The thorough and painstaking analysis by Doctor Vener of a series of tetanus cases interests me very much. It opens new vistas of thought and adds considerable factual knowledge to a disease which, from its very inception, exacts a toll of 50 per cent. Therefore, any study that will tend to lower this frightful mortality deserves our utmost attention.

A survey of the literature on the subject of tetanus reveals that many therapeutic agents, in addition to antitoxin, have been advanced in the management of this disease. The German writers stress the importance of controlling convulsions by the aid of novocain locally and intrathecally. I can see some advantage of the local treatment, particularly with relation to the muscle spasm of the masseter muscles where interference with nutrition becomes a serious problem. The phenol and magnesium sulphate methods of treatment are quite prevalent on the Continent. The French theory of phylaxis or cell fixation relates to drugs, which have a greater affinity for nerve cell tissue by displacing the tetanus toxin, thereby impeding the absorption of the latter along the nerve sheaths. The various experiments that have been carried on with the above mentioned methods are confined mostly to a limited number of patients and do not give an adequate appraisal of their value in the successful treatment of the disease. It seems that they are all neglecting the fact that the tetanus bacillus develops a severe toxin whose most remedial therapeutic agent is an antitoxin available for instant use. The prime difficulty has apparently been in not properly evaluating the advantage of administration of massive doses of antitoxin as soon as the disease is clinically recognized. This particular phase of the treatment in Doctor Vener's paper stands out in relief. He shows very conclusively that, for antitoxin to have curative value and control of mortality, it must be given in doses of not less than 250,000 units.

Now the question that arises is whether the administration of antitoxin should be spread over a period of days or given within a limited time, say the first twelve hours. Here, I believe, lies the crux of the whole question. It is my conviction that it would serve the best interests of the patient to give an optimum dose as soon as the diagnosis has been made. What that optimum initial dose should be will, no doubt, depend on the age of the patient, the severity of the disease, and the incubation period. All are factors to be considered.

Another striking feature of the paper, and one from which a valuable lesson can be learned, is the apparent indifferent attitude of the profession as a whole to the seriousness of the disease. Out of 131 patients only four received a prophylactic dose of 1,500 units, though in defense of the profession it may be said that possibly not many applied for first treatment. It is quite obvious that the ordinary 1,500 units, as customarily used for prophylaxis, does not offer full protection. According to Doctor Vener's paper, it is the trifling injuries that lead and furnish most of the exciting factors in the incidence of the disease. The gravity of the disease, with its tendency to increased incidence, imperatively demands the intelligent coöperation of the whole profession that better prophylactic measures should be instituted and the more standardized method of procedure be adopted.

Regarding prophylaxis, I rather believe that more radical measures should be taken and at least 5,000 units as an initial dose should be given to any potential case and, as Doctor Stone states, under certain given conditions, it should be repeated as each individual case warrants.

⁂

Burrell O. Raulston, M. D. (University of Southern California, Los Angeles).—It is indeed encouraging to find a record of progress concerning any disease and especially with such a serious condition as tetanus. Since the causative agent in this disease is so widespread, and injuries from accidents are increasing, prevention of infection cannot well be accomplished. It is therefore especially gratifying to find such progress in treatment of the disease, as is indicated in the statistics presented in this study. Modern texts of medicine give directions for the use of antitoxin and the various drugs to be used in conjunction with it, but so far as I know, the use of such amounts of antitoxin, as recommended by Doctor Vener, is not common.

The cost of treatment, as pointed out by Doctor Stone, is an important factor and a strong argument for the maintenance of institutions for the proper treatment of this condition at a minimal price. It is easy to understand that a lack of funds as a part of the problem of treating tetanus might mean the difference between success and failure.

⁂

Doctor Vener (Closing).—We certainly agree with Doctor Stone that halfway measures do not suffice in the treatment of this particular disease. We further realize the enormous cost of the dosage of antitoxin advocated and wonder if this does not prevent using the more massive doses, placing reliance more on the adjuvant symptomatic treatment with smaller amounts.

We can only partially share the view expressed about increasing the prophylactic package dosage to 2,000 units. For ordinary purposes, we feel that the present size syringe is sufficient and can be repeated within two to three days if indicated in the judgment of the physician. If, however, there is a large, dirty, macerated wound, then the minimum initial dose should be 5,000 units as a prophylactic measure.

We heartily concur with the opinion of Doctor Stone that, should a secondary operation become necessary, the prophylactic dose should be repeated, but care should be taken to first desensitize the patient to the horse serum.

We have had no experience in the use of the various methods of treatment described by Doctor Jackson as practiced on the Continent. We feel that our end-results justify a continuance of our program of therapy, its concomitant symptomatic treatment, and the particular nursing of cases as practiced in our hospital.

The French theory of phylaxis is being supplemented with our active serum therapy in a second series of cases now in the course of preparation since completion of this paper, and we feel that it may have some merits.

We believe that any case suggestive of tetanus should have special consideration by the attending physician; also hospitalization and consultation, regarding massive dosage, with some one particularly experienced in this special phase of medicine.

In the near future we hope to present a supplementary study of about thirty-five additional cases, compiled since July 1, 1930, and covering a period of about two and one-half years, with special reference to active therapy and incorporating the principles outlined in this paper; stressing the necessity of securing relaxation of the patient before medication.

THE PROBLEM OF DYSMENORRHEA*

By LUDWIG A. EMGE, M. D.
San Francisco

DISCUSSION *by Clifford A. Wright, M. D., Los Angeles; John W. Sherrick, M. D., Oakland; Ruby L. Cunningham, M. D., Berkeley.*

DYSMENORRHEA, like headache, is an expression of discomfort, not a disease nor a pathologic entity. Experience with surgical section of the superior hypogastric or presacral nerve, or blocking of the uterocervical ganglia of Frankenhäuser by alcohol injection, leaves little doubt that pelvic discomfort is transmitted or localized by the pelvic division of the sympathetic nervous system. As far as is known, there are no motor fibers to the uterus contained in the nerve trunks, because sympathectomy is not followed by any disturbances in menstrual flow, parturition, bladder or anal control (Cotte,[1] Kennedy,[2] Fontaine and Herrmann[3]).

The ovaries and tubes receive their nerve supply from the ovarian plexus, which is formed by fibers from the middle mesenteric and the renal plexuses. Fibers from the ovarian plexus anastomose with the inferior as well as the superior hypogastric plexus. Afferent impulses arising in the ovaries and tubes may, therefore, be transmitted in two directions, while afferent impulses arising in or near the uterus ordinarily travel only by way of the superior hypogastric plexus. Both systems are linked to the mesenteric celiac and renal plexus. It is most likely that this intricate connection furnishes the explanation for nausea and vomiting incidental to severe dysmenorrhea, transmitting impulses which result in the reversal of the gradient of peristalsis.

EXPLANATION OF PELVIC PAIN

The basic explanation for any pain production in the pelvis rests, therefore, on any irritation or pressure affecting the pelvic sympathetic system. That the causes are many is evident. If such pain occurs in connection with menstruation, we call it dysmenorrhea. The physical expression of this pain varies in degree according to the constitutional and psychologic endurance of a given individual. The evaluation of such an expression by a second or third person is an extremely difficult matter, and statistics based on such evaluations are simply personal impressions and not facts founded on an accepted standard. It is, therefore, not surprising that figures on dysmenorrhea are at such great variance. In Schröder's[10] review in "Veit-Stoeckel's System of Gynecology," the frequency of dysmenorrhea ranges from 2 to 80 per cent. More recent observers have attempted to eliminate the personal factor, but figures are still considerably at variance.

REVIEW OF HISTORIES

Desiring to know how many of my own patients complained of dysmenorrhea, and with what success I had treated them, prompted me to review the menstrual histories of 4,500 consecutive patients. I recorded pain at menstruation roughly five hundred times, or 11 per cent, taking as my standard all expressions of pain more severe than a passing discomfort. I felt this to be a very liberal interpretation and fairly reliable, since I was dealing with an intelligent group of women, and since all recordings and interpretations were my own. In studying the literature, I have been impressed with the fact that observations made under similar conditions usually yield low figures, while composite observations made by a correlator from the records of others frequently yield high figures. This is particularly true of reports of large industrial and insurance concerns. Any figure reported is, therefore, only an expression of individual interpretation, and the further the interpreter or correlator is removed from the individual contact with the patient, the greater the possibility for error.

In 370, or 8.2 per cent, of the patients studied, the cause for the menstrual pain could be laid to a readily recognizable lesion. They were, therefore, classed as suffering from extrinsic or acquired dysmenorrhea. The remaining 130, or 2.8 per cent, patients did not present a readily demonstrable cause, and since their disturbance dated, in most instances, from the onset of menstruation they were classed as suffering from primary or intrinsic dysmenorrhea. Treatment in the former group was evident, and will not be discussed here.

ANALYSIS OF PATIENTS WITH INTRINSIC DYSMENORRHEA

An analysis of the 130 patients suffering from intrinsic dysmenorrhea brought out some very interesting facts. In the first place, most of these patients had received previous treatment without any relief, and forty-five of them had been operated because of dysmenorrhea. The variety of operative procedures is illuminating: appendectomy, 18; suspension with or without appendectomy and dilation of cervix, 6; resection of ovaries, 5; bilateral salpingectomy, 1; unilateral salpingectomy, 3; dilation of cervix and curettage, 8; radical cauterization of cervix, 2; and stem pessary, 2.

---

* Read before the Obstetrics and Gynecology Section of the California Medical Association at the sixty-second annual session, Del Monte, April 24-27, 1933.

Table 1.—*Showing Relative Frequency of Dysmenorrhea*

Correlator	University	Number Patients	Percentage of Dysmenorrhea	
Boynton	Michigan	2,282	....	20.38
Cunningham	California	14,268	First 5 years Second 5 years	17.30 16.70
Rea	Pennsylvania	158	Freshmen only	20.00
Scott	Smith College	Not given	Class of 1913 Class of 1923 Class of 1931	56.00 31.70 32.40
Bell, Parsons and Schutz	Michigan	4,068 1929-1931	Slight pain Severe pain	38.00 11.00
Bell and Parsons	Michigan	840 1931-1932	Severe pain	12.00

No relief was obtained from the irradiation of the pituitary region in four, and of the ovarian region in two. It suffices to say that the indictment for hasty surgery is clearly expressed in these figures and needs no further comment.

It has often been said that if a woman marries she finds relief from menstrual distress because of regular sex relation. This is not always correct. In the figures presented next, the age of greatest sex activity also shows the greatest number of patients subject to severe dysmenorrhea.

In this series fifty-two patients were single, and seventy-eight married.

	Under 20	20 to 29	30 to 39	Over 40
Single	10	31	9	2
Married	1	56	20	1

It is also interesting to note here the low incidence of pregnancy: of the seventy-eight married women, only nine had been pregnant, of which seven had carried a child to term, one woman twice. It has been repeatedly pointed out that this form of dysmenorrhea and functional sterility go together because of failure of normal development of the uterus, and the frequently present functional failure of the ovaries. The latter fact is probably more important than the former, because functional disorders of the ovaries often explain infertility and nearly always go together with marked irregularities in menstruation. Failure in uterine development alone is not necessarily accompanied by menstrual disorders, and does not necessarily preclude sterility.

An attempt at correlation between the severity of pain with the type of the uterus, the body type, the psychogenic constitution, or the various manifestations of menstruation ended in failure. Whatever the results were for a given grouping could be matched by similar results in a group showing normal characteristics. In grouping pain, for instance, I found that it was severe in 20, incapacitating in 110, 48 of which had to go to bed for from 6 to 48 hours, with 33 experiencing nausea and vomiting for from 6 to 36 hours; 65 had pain for one day only, 53 for 2 days, 4 for 3 days, 6 for 4 days, and 2 for 5 days. Fifteen had premenstrual pain for from one to seven days, but none had postmenstrual pains. Then I classified the patients according to body type, and recorded 87 as normal, 14 as obese due to anterior pituitary insufficiency, 5 as obese due to hypothyroidism, 13 as thin or asthenics, 10 as eunuchoids, 4 as boyish or infantile, and 2 as hyperthyroids. Similarly, on a basis of psychogenic constitution, I classed 87 as normal, 15 as hyperesthetics and 28 as emotionally unstable, and finally I grouped the development of the uterus as follows:

Type of Uterus	Normal	Hypoplastic	Infantile	Hypertrophied
Single	16	18	11	5
Married	32	26	8	14

With this I noted also 24 retroversions, 13 mild cases of cervical irritation, 15 patients with tender or spastic uterosacral ligaments, 5 with congenital erosions, 3 with acute anteflexion, 4 with intrapelvic varicosities, and one with a chronic appendicitis. I then tried to link the type of the uterus with either degrees and days of pain, but again was confronted by the fact that the normal uterus was just as often associated with as severe a type and as great a duration of pain as occurred with any of the other three types of uteri recorded. Likewise, the length and duration of the menstrual cycle could not be linked with any of the other observations. There are the usual irregularities in all groups with about 40 per cent of the patients menstruating approximately four to five days every twenty-eight days.

PSYCHOGENIC MAKE-UP

Next an attempt was made to correlate the psychogenic make-up with pain appreciation. Among the eighty-seven normal individuals there were proportionately more severe cases of pain than among the emotionally unstable, although the fifteen patients classed as hyperesthetics all suffered severely, and longer than any number of the other two groups. It cannot be denied that certain individuals, because of functional nerve disorders, suffer more than others; but I am not willing to accept that the vast majority of dysmenorrhea is of psychogenic origin, as certain German observers would like us to believe. In Boynton's[4] report attention is called to the fact that the high-strung individuals among the 2,282 students studied showed dysmenorrhea less frequently than those of a normal control group. I have come to the conclusion that all attempts at correlating given factors observed in connection with intrinsic or primary dysmenorrhea are futile. Cunningham and Boynton, both studying large numbers of students, concluded that dysmenorrhea cannot be linked with changes in posture, physical exercise, minor infections, visual disturbances, and climatic changes. Most writers, on the other hand, agree that constitutional inferiority often is associated with menstrual pain. This is also true of the small series presented here, as pointed out above.

PRIMARY DYSMENORRHEA

There have been many theories advanced to explain primary dysmenorrhea. When T. B. Sellers[11] canvassed a large group of gynecologists in regard to their ideas on this subject, he received a sufficient variety of answers to fit almost any theory. The old dictum of Sims, nulla dysmenorrhea nisi obstructiva, apparently still has a great number of followers. Sixty-four per cent of the answers Sellers received gave congenital cervical stenosis as the actual cause for essential dysmenorrhea. This has been disputed by careful observers. E. Novak[12] tried to disprove the claim of Sims by the introduction of the "probe test": he reported that during the menstrual flow in dysmenorrhea, one could introduce a reasonably large uterine sound past the internal os of the cervix without finding any obstruction. Personally, I do believe that a spasmodic cervix or a cervix unable to relax under the stress of menstrual congestion because of a congenital imbalance of connective tissue and musculature could explain the pain produced. The amount of blood that normally flows through the cervical canal per minute is very small and perhaps no factor. Since dysmenorrhea is common with normal uteri, the inability of the cervical and uterine tissue to relax under the strain of congestion suggests itself as the more important factor. In this series, forty-eight, or about 27 per cent, of the patients possessed normal generative organs. The developmental disturbances in the size or position of the uterus do not offer a satisfactory explanation. Miller's[13] theory of poor posture and poor muscle tone has been answered by Boynton[4] in the negative. Disturbances in the vegetative nervous system, as explained by J. Novak and Harnik,[14] can be linked up with the studies of Blotevogel and Poll,[15] Kennedy,[2] Fontaine and Herrmann,[3] and the preceding group of investigators studying the results of pelvic sympathectomy. Their conclusions deal with the most tangible part of the mechanism of pain production. In connection with this, one should also consider Schultz's theory of venous stasis, and E. Novak and Reynold's[12] theory of muscular irritability in the case of a disturbed estrinprogestin balance. That ovarian hormones do influence the development of the uterus in the presence of a still existing growth stimulus is fairly well established. Blotevogel,[15] Kennedy,[2] and others have also shown that ovarian hormones, and particularly estrin, are capable of stimulating an atrophic ganglion of Frankenhäuser to regeneration. The final answer to the question whether the influence of ovarian hormones or any other hormone is exerted directly onto the uterus, or to the nervous mechanism of the uterus, has not been given. All we know today is that, in selected cases, organotherapy effectually relieves dysmenorrhea. There are those who, like Clow,[16] disclaim any result from organotherapy. Mazer and Goldstein[17] lay this to either inactive materials or to insufficient dosage. Any mechanical method of treatment for dysmenorrhea which offers permanent improvement or complete relief must, above all, succeed in relieving irritation of the nervous mechanism of the uterus. How this is accomplished I do not know, except that a marked relaxation and softening occurs in the uterosacral and broad ligaments after stimulation of the uterus by certain electric currents, in particular galvanism. Adherents to the Brand method of pelvic massage claim the same results. In selected cases properly fitted stem pessaries or slow dilation of the cervix occasionally may give relief, but have not been particularly successful in my own experience.

TREATMENT

In undertaking the treatment of dysmenorrhea one should aim to take all possibilities touched upon into consideration. It goes without saying that, above all, we should improve the physical and mental condition of our patients, if that is necessary and possible. For the latter it is sometimes necessary to provide the patient with an effective anodyne to break the fear of another painful and distressing menstruation. Next we should aim at improvement of the uterine condition. I have found that in hypoplasias and in infantile types of the uterus the intracervical application of negative galvanism is very effective, both as a relaxing agent and as a stimulus for muscular development. At the same time we should aim to correct such endocrine defects as our present knowledge permits us to do. In the presence of spastic uterosacral ligaments which most likely are due to unrecognized cervical irritation, hydrotherapy and the use of detergent suppositories will frequently solve the problem. Sex matters must be discussed and regulated. In fact, prior to undertaking the treatment of dysmenorrhea the patient should be studied purely from a medical point of view, and all systemic disturbances should be corrected. If all measures fail, the patient may have to be subjected to more radical measures. If a displacement of the uterus is considered to be the underlying cause, certainly no suspension should be undertaken unless the patient has been tried out with a well-fitting vaginal pessary. If this rule is not followed the patient will join the army of the uselessly operated, of which I presented a fair contingent in the beginning of this report. If dilation of the cervix by galvanism does not bring relief, mechanical dilation with graduated dilators will be equally unsuccessful. I have come to the conclusion that if all measures fail, one should then attempt to block Frankenhäuser's ganglia according to the method of Blos,[18] using 70 per cent alcohol con-

Table 2.—*Results*

Method of Treatment	Number Patients	Relieved	Improved	Failure
Galvanism alone	33	18	9	6
Glycerin extract ovary	26	2	15	9
Estrogen, theelin, amniotin	12	2	4	6
Theelin and thyroid	3	1	2	..
Thyroid alone	18	8	6	4
Theelin and galvanism	12	6	4	2
Hydrotherapy, vaginal suppositories	20	10	9	1
Cauterization of cervix, suppositories	6	4	2	..
Total	130	51	51	28
Percentage		39.23%	39.23%	21.54%

taining 5 per cent novocain. This method is certainly as rational as that used for trigeminal neuralgia: it will not interfere with the motor function of the uterus or bladder, and can be carried out in the office, but requires dexterity and a good knowledge of pelvic anatomy. It is about as successful as resection of the presacral nerve, and decidedly simpler and less expensive for the patient. My own experience with this method, as well as with sympathectomy, is still limited, but the results have been uniformly good.

It is decidedly difficult to select patients for a given treatment according to fast rules. I have followed as closely as possible the outline. I have given in the previous paragraph. Frequently it has become necessary to combine treatments or to resort to a different form of treatment when the previous one has failed. Hygiene and psychotherapy perhaps play a more important rôle in obtaining relief than one can estimate. Whatever other measures were employed are outlined in Tables 2 and 3.

Of the twenty-eight failures, ten submitted to more radical treatment and eighteen did not return.

The percentage of failures was, therefore, ultimately reduced to 16.92 per cent. The amount of improvement recorded was sufficient to allow the patient to continue with her respective occupation without serious hindrance. All patients were followed up over sufficiently long periods to obtain accurate information as to the permanency of the result. In the group treated by galvanism more than half showed some form of mild recurrence, which brought them back for further treatment out of their own volition; this, I think, is sufficient proof for the efficacy of the method. The failures in organotherapy, particularly with the glycerin extract of the ovary marketed by Schieffelin & Company, can be explained by insufficient dosage, since this preparation is not standardized; although I am convinced that it contains potent follicular hormone, judging from clinical results I have observed in the treatment of oligo- and hypomenorrhea. Failures with the standardized preparations may also mean insufficient dosage or inaccurate application of the principle involved. Thyroid therapy was not based entirely on the recorded basal metabolic rate, but on clinical phenomena such as lack of endurance, sluggishness, myxedematoid skin, and overweight. It was found that in this group a number of patients could tolerate much larger doses than would be expected from the laboratory findings and, in fact, did not report improvement until the individual tolerance had been ascertained. It is very interesting that a number of patients could be relieved by hydrotherapy, particularly hot baths during menstruation, and sedative vaginal suppositories. The use of the latter was begun a week before the expected period, and was continued through the period. This method was most frequently used when spastic uterosacral ligaments were present. The suppository used is a commercial preparation containing acetanilid, sodium borate, zinc borate, hydrastin in glycerogelatin. I make no claims for either of the ingredients, but from observations in the treatment of pelvic inflammatory disturbances I can state with certainty that these suppositories bring relief from pelvic distress. When using estrin containing substances I have always attempted to simulate the gradual increase of estrin production normally occurring with ovulation. It was therefore necessary to work out a scheme for each patient according to the known menstrual interval. When using the glycerin extract of the whole ovary, medication was carried into the menstruation, since this substance is supposed to contain a lutein factor. When using the pure follicular hormone, the maximal dose was reached about two days before the expected flow, and the patient was instructed

Table 3.—*Results*

Method of Treatment	Number Patients	Relieved	Improved	Failure
Stem pessary after dilation	3	..	..	3
Suspension of uterus	1	1	..	..
Suspension and resection of presacral nerve	2	2	..	..
Appendectomy	1	..	..	1
Nerve block by alcohol injection	3	2	1	..
Total	10	5	1	4

to discontinue treatment at that period; no active progestin containing preparations being commercially available, this scheme was thought to be the most logical. Of other endocrine substances used in the treatment of dysmenorrhea, Collip's emmenin has attracted some attention. I have no personal experience with the preparation. It has been used at the Stanford Women's Clinic with eleven patients. Doctor Fluhmann was kind enough to tell me that six patients were definitely relieved, two were improved, and three experienced no relief whatsoever. Collip's emmenin (Eli Lilly & Company) is an estrus-producing hormone soluble in alcohol, administered orally. Failure of results may again be due to the insufficient dosage or to faulty application of this substance.

Dosage.—The question of dosage for ovarian hormones does not so much rest with our inability to arrive at the required dose, as it does with the tremendous expense involved when large amounts have to be given. It is for this reason that I have resorted to the use of the unstandardized glycerin extract of the whole ovary.

Operative Procedures. — Among the operative procedures, stem pessaries failed me completely and I have given up their use. There is a great deal to be said against operative procedures for the relief of dysmenorrhea of the primary or essential type. I again call attention to the great number of surgical failures recorded in the earlier part of this report. In Europe sympathectomy has gained a great deal of favor, particularly among the French and Italian gynecologists. This operation is not easy and consequently often outside the reach of many casual surgeons. The alcohol block advocated by Blos[18] is certainly more simple, equally efficacious and inexpensive for the patient.

There are undoubtedly a great many other ways of treating primary dysmenorrhea. Because of our complete lack of knowledge of the actual mechanism involved, treatment must be empirical to a degree. Nevertheless, a serious attempt at analyzing the individual patient promises a far better result for improvement or complete relief than the mere acceptance of one method to be used for all patients suffering from this disturbance.

CONCLUSIONS

Of 4,500 consecutive patients of the intelligent class only 130 were found to suffer from primary or essential dysmenorrhea. Nearly one-third of them had previously submitted to surgical procedures without relief. A careful analysis of the individual patient and the application of sound principles of conservative treatment relieved or improved about 80 per cent sufficiently to permit them to carry out their duties without hindrance. Among more radical measures nerve block by alcohol injection of the uterocervical ganglia of Frankenhäuser offers the simplest solution.

2000 Van Ness Avenue.

REFERENCES

1. Cotte, G.: Lyon chirg., 29:112, 1932; ibid., 29:252, 1932.
2. Kennedy, W. P.: Edinburgh M. J., Trans., 36:75, 1929; Brit. M. J., 1:746, 1932.
3. Fontaine, R., and Herrmann, L. G.: Surg., Gynec., and Obst., 54:133, 1932.
4. Boynton, R. E.: Am. J. Obst. and Gynec., 23:516, 1932.
5. Cunningham, R.: Proc. Am. Student Health Assn. Bull., 15:84, 1931.
6. Rea, M. H.: Proc. Am. Student Health Assn. Bull., 15:65, 1931.
7. Scott, F. K.: Proc. Am. Student Health Assn. Bull., 15:70, 1931.
8. Bell, M., Parsons, E., and Schutz, E.: Proc. Am. Student Health Assn. Bull., 15:77, 1931.
9. Bell, M., and Parsons, E.: Med. Women's J., 38:31, 1931.
10. Schröder, R.: Veit-Stoeckel, Handb. der Gynäk. Münich, 414, 1928.
11. Sellers, T. B.: South. M. J., 25:167, 1932.
12. Novak, E., and Reynolds, S. R. M.: J. A. M. A., 99:1466, 1932.
13. Miller, N. F.: J. A. M. A., 95:1796, 1930.
14. Novak, J., and Harnik, E.: Med. Klin., 25:251, 1929.
15. Blotevogel, W., and Poll, H.: Med. Klin., 23:1503, 1927.
16. Clow, A. E. S.: Brit. M. J., 1:4, 1932.
17. Mazer, C., and Goldstein, L.: Clinical Endocrinology of the Female, 313. Philadelphia. 1932.
18. Blos, D.: München Med. Wchnschr., 76:1173, 1929.

DISCUSSION

Clifford A. Wright, M. D. (2417 South Hope Street, Los Angeles).—Dysmenorrhea, as explained by Doctor Emge, is a very difficult condition to treat successfully, and this is reflected in the great number of patients who come to our offices having had considerable treatment, including surgical procedure, without results. The cause of the irregular results of treatment of dysmenorrhea is probably due to lack of more definite knowledge as to its etiology. As stated by Doctor Emge, this condition is like headache, being a symptom and not a disease entity, and undoubtedly can have a variable etiology. Most authors agree that abnormal contractility of the uterine muscle is the probable cause of the severe pain, and in a goodly percentage of cases this in turn may be due to endocrine factors. I am particularly interested in the endocrine phase of this condition, and when we consider, as explained by Doctor Novak in the *American Journal of the Medical Sciences,* February, 1933, that folliculin produces contractions of the uterine muscle and that progestin, and the urine of pregnant women, inhibits them; and also, as explained by Mazer and Goldstein, that estrin or folliculin apparently sensitizes the uterus to the action of pituitrin, the endocrine basis for the etiology of many cases of primary dysmenorrhea is logical. In Doctor Emge's group of 130 patients, thirty-five, or approximately 27 per cent, were definitely endocrine in type. Also of significance is the fact that in my endocrine cases of the menstrual age, 70 per cent had menstrual irregularities. Many women with dysmenorrhea have normal pelves. We may see dysmenorrhea in hypo-ovarianism, hypopituitarism, and occasionally in hyperthyroidism, but practically never in pure hypothyroidism. From an endocrine standpoint, the treatment would depend on the type of individual under consideration. Undoubtedly the use of a luteinizing principle, as that derived from pregnancy urine, should give results in many of these cases.

⁂

John W. Sherrick, M. D. (350 Twenty-ninth Street, Oakland).—Dysmenorrhea is one of the most difficult therapeutic problems in gynecology; and because of its frequency and its incapacitating effects (it is estimated that 90 per cent of women experience some disturbance, and in at least 50 to 65 per cent it interferes with their daily routine) it is a very practical problem. It is, likewise, a most discouraging problem. It is particularly gratifying to have Doctor Emge's explanation of the production of pelvic and reflex pain through disturbance of the intricate sympathetic nerve supply of the pelvic viscera, and his sane and comprehensive review of the whole subject.

Of the two types of dysmenorrhea, primary or intrinsic, and secondary or extrinsic, the former is the more important because of the difficulties it offers as to etiology and treatment. The extrinsic type, being associated with and due to obvious pelvic pathology, is relieved usually by treating this pathology.

Intrinsic dysmenorrhea is often a very difficult problem, and of the numerous theories offered in explanation no one is sufficient. Of these, one recalls the following: congenital stenosis of the internal os; narrowing of the internal os by premenstrual swelling of the endometrium; developmental irregularity between the uterine musculature and connective tissue elements with the venous congestion of menstruation, causing painful stimulation of the nerves of the uterus; genital hypoplasia with long conical cervix, acute anteflexion, narrow internal os, tissue defects, etc.; deficient uterine and sacro-uterine ligament elasticity, narrow cervix and lower segment with deficient adaptability to menstrual congestion; chronic pelvic congestion from any cause, as overexertion, abnormal or prolonged sexual excitement, fatigue, constipation, faulty hygiene, etc., especially in the presence of the proper local and general background; abnormal physical and nervous unbalance and irritability, the so-called constitutional inferiority and psychogenic type, with lowering of the threshold of gain; endocrinopathies, thyroid, folliculin and progestin disbalance, etc.

No one of these theories furnishes a basis on which all cases of intrinsic dysmenorrhea can be treated. One must evaluate each case on its own merits and approach treatment largely from an empiric standpoint. Certain general measures are useful in all, as rest; heat in various forms; coal-tar derivatives, alone or combined with the barbiturates; codein, atropin to the point of tolerance; adjustment and control of the mode of life (adequate rest, sleep, relaxation, exercise, avoidance of too much social strain, etc.); bowel control; an adequate nourishing diet; correction of mental attitude; regulation of sex life, etc. In many cases we find marked benefit from the stimulating and relaxing effects of electrical dilatations. Some respond favorably to correction of endocrine defects—thyroid therapy, the use of estrin or antuitrin "S" or follutein, progynon, etc. Many cases fail to respond to all forms of therapy. We have not resorted to section of the sympathetic nerves or to alcoholic injection of the uterocervical ganglia. I feel, too, that we have not made sufficient use of hydrotherapy and sedative vaginal suppositories.

⁂

Ruby L. Cunningham, M. D. (University of California, Berkeley).—As a member of the Student Health Service staff of the State University, I have had abundant opportunity to be perplexed as to the cause of dysmenorrhea and concerned as to its most effective treatment.

In an attempt to link painful menstruation with evidences of nutritional disturbance, or with dysfunction of the glands of internal secretion, a study was made of 14,268 young women who entered the University of California from 1920 to 1929. It was found that the group who have menstrual pain differ from the group who do not have pain, in three ways: more of them are underweight, more have a low blood pressure, and more are far-sighted. Doctor Boynton, of the Student Health Service of the University of Minnesota, adds to this list low hemoglobin determinations.

Poor nutrition, secondary anemia, and low blood pressure are evidences of constitutional inferiority noted by many observers and spoken of by Doctor Emge.

Young women of optimum weight for age and height, with blood pressures normal or above average, with satisfactory hemoglobin determinations and normal vision, often suffer severe menstrual pain. Those with marked evidences of constitutional inferiority may have no pain. Dysmenorrhea cannot then be considered to be the result of constitutional inferiority. Pain with menstruation may lessen appetite, even cause nausea and vomiting, and thus contribute to malnutrition and anemia.

In the study of the University women, there was no evidence that glands of internal secretion other than those of the reproductive system are responsible for menstrual pain.

Fortunately, many cases of dysmenorrhea respond favorably to improvement in general health, to increase in exercise, to the use of antispasmatic drugs and products of the endocrine glands.

When medical therapy fails we turn to surgery. Too frequently surgery also fails to give relief and, in addition, is destructive. Doctor Emge has outlined a conservative method of attaining relief from pain which, pending the day when the cause of dysmenorrhea is clear and its medical therapy or its successful prevention possible, should find frequent application.

It is to be regretted that the uterocervical ganglia of Frankenhäuser is difficult to locate and to inject, and that for this reason this form of treatment must remain in the hands of the few skilled in its application.

BISMUTH INJECTIONS IN THE TREATMENT OF WARTS*

REPORT OF BISMUTH INJECTIONS IN THE TREATMENT OF SIXTY-ONE CASES OF WARTS AT THE COWELL MEMORIAL HOSPITAL OF THE UNIVERSITY OF CALIFORNIA

By C. J. Lunsford, M. D.
R. R. Thomson, M. D.
G. W. Binkley, M. D.
and
D. S. Fox, M. D.
Oakland

Discussion *by Sophie A. Lurie, M. D., Los Angeles; Samuel Ayres, Jr., M. D., Los Angeles; Stanley O. Chambers, M. D., Los Angeles.*

A RECENT article† by Dr. Sophie A. Lurie gave the results of treatment of verrucae by intramuscular injections of bismuth salicylate. A total of forty-nine patients were treated, of whom five were adults and forty-four were children. The technique of treatment was, in the beginning, weekly intragluteal injections of bismuth salicylate in doses appropriate to the age of the patient. Subsequent injections were withheld until such time as the regression observed had become stationary. The largest number of injections given was nine, and that in only one case. The statement was made that of the thirty-four cases observed over a sufficient period of time, the warts completely disappeared in all.

Among the students attending the skin clinic at the Cowell Memorial Hospital of the University of California at Berkeley, as well as in other clinics, we come in contact with many cases of warts. We have used all the modalities available in the treatment of such cases, and have felt that none of them were entirely satisfactory. Therefore, in the presence of such a problem, we read the article by Doctor Lurie with unusual interest:

---

* Read before the Dermatology and Syphilology Section of the California Medical Association at the sixty-second annual session, Del Monte, April 24-27, 1933.

† July 1932 issue of the *Archives of Dermatology and Syphilology.*

certainly if a few intramuscular injections of bismuth salicylate would solve the wart problem, we felt that a contribution of real value had been offered to the profession.

We placed a total of sixty-one cases of warts under treatment with bismuth injections. In fourteen of these patients, treatment was discontinued because of illness, local pain, interference with work, and lack of coöperation; of the remaining forty-seven cases thirty-nine were adults and eight were children. Thirty-seven of the adults were given intramuscular injections of one cubic centimeter of bismuth salicylate (Lilly) into the gluteal region at weekly intervals. Two adults were given the same dose of Lilly's bismoid. The eight children were given one-half the adult dose of Lilly's bismoid. The location in the majority of cases was the hands and feet. There were cases, however, of involvement of the face, vermilion border of the lips, and penis.

ANALYSIS OF CASES AND RESULTS OF TREATMENT

Of the total of thirty-nine cases in adults which coöperated, eleven were cured and twenty-eight failed to be cured. The percentage of cure was 28.2 per cent. Of the eight children who coöperated, four were cured, and in four there was failure. The percentage of cure was 50 per cent. (See Table 1.)

Table 1

	Total	Clinically Cured	Failed	Results
Adults	39	11	28	28.2%
Children	8	4	4	50%

Adults who were clinically cured received from one to sixteen injections of bismuth, with an average of 5.5 injections each. An average of 7.5 injections were given in those cases in which treatment failed, the greatest number being fourteen. The children who were clinically cured received an average of ten injections, and one received as many as twenty-two. In those cases in which failure was noted, the average number of injections was 7.7 (see Table 2). The greatest number of injections was twelve. Two adult patients were cured after one injection each.

COMMENT

In a few patients, a mild inflammatory reaction occurred about the wart after the first several injections had been given. Such reaction was not always followed by clinical cure. In some of the plantar warts, pain disappeared without a clinical cure. In two cases of failure new warts developed after the twelfth injection of bismuth. In many cases of failure through the entire course of treatment, the warts already present continued to increase in size. Analysis of the cases, from the standpoint of number or site, was without sufficient significance to justify classification. We were unable to observe any clinical features in the cases which were treated successfully which might serve as a criteria of choice in selecting other cases for further bismuth therapy.

Table 2

	Cured	Failed
Adults average number of injections	5.5	7.5
Children average number of injections	10	7.7

CONCLUSIONS

The 50 per cent of cure in eight cases in children and the 28.2 per cent of cure in thirty-nine cases of adults would indicate that bismuth therapy has a limited place in the treatment of verrucae vulgaris. One would be justified in trying it in such cases as multiple warts on either hands or feet. Other cases where such treatment might be utilized would be washerwomen, surgeons, nurses, or children, where destructive measures are for any reason contraindicated.

3115 Webster Street.

DISCUSSION

Sophie Lurie, M. D. (1026 Story Building, 610 South Broadway, Los Angeles).—I am happy to learn that our attempt at research in the lines of treatments of verrucae vulgares gave impetus to dermatologists to continue our observations. Considering the findings and comments of the authors of the paper, I presume that their observations have not been carried out for a sufficient length of time; I mean that some of their demerits I consider as positive steps to the regression process. They say, for example, "In some of the plantar warts pain disappeared without a clinical cure. In two cases of failure, new warts developed after the twelfth injection of bismuth. In many cases of failure, through the entire course of treatment the warts already present continued to increase in size."

The first symptom of response to treatment is cessation of pain. Because some of the plantar warts are sitting very deeply, it takes a long time to bring them out to the surface. Therefore, while being treated, those which are located deeper come out later; and this feature I consider, not as a failure, but as a step to progress: finally, they come out to the surface, go through the cycle of their regression and entirely disappear. I had cases where I had diagnosed at first one or two warts on the ball of the foot which gradually increased until I counted a dozen. The pain became worse while the warts approached the surface, but it disappeared as the warts regressed. I had another case lately of one wart on the volar aspect of the great toe. After the first treatment, the whole volar area was covered by minute hemorrhages, and this meant that minute warts were seated more deeply and could not be seen by the naked eye. They responded immediately, however, to treatment: after two applications, three weeks apart, the patient was cured.

The next point of the commentators "that in many cases of failure through the entire course of treatment the warts already present continued to increase in size," should be noticed. Sometimes it is remarkable to see how a wart, especially a plantar one, which is on the level with the skin, mostly cornified, becomes elevated and enlarged. This is one of the positive signs of success. I have seen a case where the wart appeared one centimeter above the level of the skin and each papilla occurred as a transparent, jelly-like digitation with a reddish, tender, thread-like screw inside (terminal vessel). Considering the clinical features, the most striking one is bleeding: sometimes the warts bleed profusely after the treatment is begun. One Japanese boy, ten years old, had a wart the size of a split pea on the lower lip, on the border of the skin, but not extending above its surface. After the first treatment the wart protruded, became hemorrhagic, and reminded one of pyogenic granuloma; gradually it contracted, and then diminished to a nearly invisible size. The boy is still under observation. I believe that the tendency of the blood vessels to become engorged and to produce a hyperemia is the fundamental basis for the success of the treatment. This phenomenon did not occur so extensively in all cases. In those sites where the vascularization is richer, this feature is more pronounced. But in every case, nevertheless, we see how the wart becomes soft and easily movable, as if lubricated, indicating that the nutrition is improved; and, as a fact, the papillae get larger, and appear higher above the surface. And I presume that the result of the engorgement by the blood forms some local defensive bodies which confront the virus.

I observed another feature, especially on the plantar warts, when they became calloused. Because the process of involution starts underneath, we try to remove any obstacle of pressure to make more room for the dilated vessels inside the growth and thereby diminish the pain. The patient is ordered to apply for a few days 15 per cent salicylic acid in flexible collodion, and afterward we begin the intramuscular treatments. When children come with infected warts, we treat the secondary infection first and continue with bismuth. We had prompt results in verrucae planae. The effect of treatments among children is more spectacular than among adults.

Some authors have said that by fulgurating one wart the rest of them may be made to disappear sympathetically. I fulgurated a wart on the right little finger which seemed to me to have entirely disappeared. A few months later a wart reappeared on the same site, with a crop of others, smaller in size, on the other fingers. They remained there for one and one-half years, while I experimented with the bismuth salicylate intramuscular injections. Then I tried these injections on those warts. After four treatments they have entirely disappeared. The patient is a nurse whom I meet often, when I check up the state of her hand. So far she has had no relapses, and nine months have elapsed since the last treatment. I would differentiate two varieties of verrucae vulgares. In one group the ordinary warts, which consist of numerous hypertrophied, cornified papillae, respond to our treatment very promptly. The warts of the second group are wider, larger, convex, solid, pinkish in color, and the papillae are faintly seen. It seems as if minute granules top the growth. They are of longer duration, not painful. We have seen them only on the hands mostly in groups, coalescent. One of my private patients, an adult, had both kinds on one hand. The first type responded promptly; the second much more slowly; in general, this type disappears slowly. They involute in an entirely different manner. As soon as treatment is instituted the wart becomes thinner, and tiny, scaly débris come off. The involuting process continues slowly until a pinkish spot remains at the site of the wart, which gradually disappears entirely. We have never seen any bloody points as in the first type.

As various species of fungi and yeast infections give various clinical entities, we presume there might be different viruses of verrucae vulgares infection producing variations of the growth.

I wish to say a few words in regard to bismuth salicylate (Mulford's). In the beginning, three years ago, I started with this bismuth preparation because I used it routinely at the luetic clinic; but after our successful results I continued with it as with an insoluble preparation which produces deposits in the muscles, and the absorption goes on, I presume, more or less adequately. I desire to space the treatments as far apart as possible, and resume the bismuth treatments whenever the clinical picture indicates that it is necessary to do so.

In regard to the statistical data of the authors, I wish to say that I have had very few adult patients with warts; their response, as I mentioned above, is slower, while among children, so far, I have not had any failures.

I use only bismuth salicylate (Mulford's). Perhaps the brand of the bismuth also has some effect. I hope in the near future to control our clinical findings by the pathologic sections. Because of the fact that some investigators used gold and lead with some hopes of success in malignant growths, it may stimulate one to apply bismuth salicylate for the same reason.

In closing I wish to express my deep appreciation to Dr. Samuel Ayres, Jr., for his encouragement in our study and his first endorsement of our findings, as the chief of the medical staff of the Parents and Teachers Yale Health Center in Los Angeles; and I also wish to thank Doctors Lunsford, Thompson, Binkley, and Fox for having been so kind as to ask me to discuss their paper.

◆

Samuel Ayres, Jr., M. D. (2007 Wilshire Boulevard, Los Angeles).—I have followed Doctor Lurie's pioneer work in this new treatment for warts with a great deal of interest. I have collected a series of seventy-one cases of warts, including several varieties in which bismuth was administered intramuscularly. My statistics lie approximately midway between those of Doctor Lunsford and his collaborators, on the one side and those of Doctor Lurie on the other. My results are better than Doctor Lunsford's, but not so good as Doctor Lurie's.

This series of seventy-one cases represents patients in whom the condition could be followed for more than two or three weeks. The results can be described by means of a table.

	Per Cent
Cured or greatly improved	54
Improved	15
Unimproved	29
Total cases	71

Of these there were twenty-seven cases in children, with 55 per cent cured or greatly improved, and forty-four cases in adults, with 54 per cent cured or greatly improved.

There were eight cases of juvenile flat warts, with 62 per cent cured or greatly improved, and six cases of follicular warts, in the bearded area, with 66 per cent cured or greatly improved.

Various types of bismuth were employed; bismuth salicylate (Parke-Davis & Company) was probably used most frequently. Many cases were cured within from one to five doses. The patient receiving the largest number of treatments was a rather heavy woman, with several large warts underneath the thumb nail. She received twenty-four injections with no benefit whatever, but finally responded to applications of radium.

According to my observations, warts which respond to treatment, especially those on the soles, undergo a color change, becoming rather purplish or slate gray. They then undergo a crumbling process, so that they can easily be picked out, leaving an empty pit.

In spite of the fact that the majority of my patients (54 per cent) responded to this mode of treatment, I am reserving it, like Doctor Lunsford and his coworkers, more and more for cases of multiple warts, or single warts in which local treatment is contraindicated. So many cases require a fairly large number of doses that the individual becomes somewhat impatient. It is far simpler in cases of one or two warts to employ carbon dioxid snow, or moderate doses of radium, or the x-ray. I consider the bismuth treatment of warts, however, as a very valuable contribution to dermatological therapeutics.

◆

Stanley O. Chambers, M. D. (1260 Roosevelt Building, Los Angeles).—The administration of bismuth salicylate by intramuscular injection in the treatment of verrucae was advocated by Doctor Lurie more than a year ago.

It was our pleasure at that time to check her results clinically at the Los Angeles County General Hospital, Children's Hospital and Veterans' Hospital.

Our results in figures would agree with Doctor Lunsford's 28 to 30 per cent cures.

There is apparently no specificity to bismuth in the treatment of warts. This drug acts favorably in about the percentages that other drugs, such as neoarsphenamin and sulpharsphenamin do.

I can appreciate the effect on the observer who witnesses the clearing of warts, following the use of bismuth. It is indeed spectacular. This, however, is also true in the use of other drugs as well as age-old witchcraft. It would appear now specific.

There appears to be a mechanism as yet unexplained which accounts for the clearing of verrucae as well as their development.

Doctor Lurie should be complimented upon adding another agent, even though but partially effective, which adds to the patient's chance of recovery.

FEMALE BLADDER INJURIES INCIDENT TO SURGERY *

By William E. Stevens, M. D.
San Francisco

Discussion *by Robert V. Day, M. D., Los Angeles; Lionel P. Player, M. D., San Francisco; Harry W. Martin, M. D., Los Angeles.*

INJURIES of the female bladder incident to surgery are probably more common than would be supposed from the infrequency with which cases are reported in the literature or are recorded on hospital charts. I found a record of but five cases of accidental injury of the bladder during operation in 53,254 admissions to the San Francisco Hospital. Hamer[1] quotes Graves,[2] who stated that only two cases occurred during 19,215 admissions to the Carney Hospital. This accident occurred three times during 1,086 pelvic operations in Stanford Hospital. Only those cases in which the bladder was incised or torn are included in these three series of cases. This complication is occasionally unavoidable, and has occurred in the experience of many competent surgeons.

OPERATIONS RESPONSIBLE FOR BLADDER INJURY

Injury of the bladder occurs most frequently during hysterectomy, salpingectomy, and oöphorectomy. It has also followed intravesical instrumentation, fulguration, and distention of the bladder with air or fluids, especially if the wall is already weakened by some pathologic condition. Curettage of the uterus, cesarean section, and instrumental delivery have likewise been responsible for serious injury to the bladder in many instances. G. Muller[3] reported a case in which, in addition to extensive tearing of the posterior bladder wall, the organ had also been torn away from the symphysis pubis, and the right ureter seriously damaged by a curette during an operative abortion. Damage to this organ is not uncommon when a portion is included in a hernial sac.

TYPES OF INJURY

Injuries are not limited to incisions, tears, punctures, ruptures or inclusion by sutures. Traumatism of the bladder and its attachments by rough handling, and necrosis following pressure from retractors, are occasionally responsible for postoperative symptoms. Later, distortion and displacement of the bladder, due to scar tissue resulting from the repair of vesicovaginal fistulas and to pressure or adhesions, are often responsible for interference with circulation, decreased bladder capacity and partial retention of urine with subsequent infection. Bladder symptoms are common following the transposition operation on the uterus; and this procedure has been abandoned by many surgeons. The most common sequelae of bladder injury are vesicovaginal, and abdominal fistulas and extravasation of urine.

REPORT OF CASES

Case 1.—A married woman, fifty years of age, complained of attacks of pain in the left lumbar region, nausea and vomiting, following a transposition operation on the uterus six months previously. The bladder had been irrigated on numerous occasions because of pus in the urine. Persistence of her symptoms had caused her to return to the hospital several times for short periods. The urine contained an enormous number of pus cells. Cystoscopic investigation revealed an inflamed bladder mucosa, elevation of the vesical orifice, hypertrophy of the trigone, and a deep bas fond. A cystogram (Fig. 1) showed a large sacculation protruding from the lower right posterior wall of the bladder, and a pyelogram showed marked hydronephrosis with almost complete destruction of the left kidney. Improvement followed nephrectomy.

* * *

Case 2.—A vesicovaginal fistula followed a forceps delivery. An unsuccessful attempt at intravesical repair was made one year later. A second intravesical attempt at repair during the following year was successful. Three months later a ventral hernia developed. This was repaired. A cystogram (Fig. 2) showed marked postoperative distortion of the bladder.

* * *

Case 3.—A patient entered the hospital complaining of profuse intermittent bleeding from the bladder, beginning after sexual trauma seven weeks previously. Examination also revealed an abdominal sinus as well as several other sinuses in the gluteal region. She had undergone numerous operations, including suspension of the uterus and a bilateral oöphorectomy. A cystogram (Fig. 3) showed marked distortion of the bladder and a decrease in its capacity. The bleeding ceased a few days after the patient entered the hospital.

SYMPTOMS AND DIAGNOSIS

The female bladder is more sensitive to direct and reflex influences than that of the male, and disturbances of urination are very common following gynecologic procedures. Partial or complete retention of urine is usually found immediately after pelvic operations in this sex.[4] The symptoms associated with bladder injury are not infrequently puzzling and the diagnosis uncertain. This applies especially to those cases in which the injury has not been detected at the time of the original operation, and to those in which the injury has been discovered and the bladder wall apparently satisfactorily repaired.

REPORT OF CASES

Case 4.—A hysterectomy was performed by a competent surgeon because of a large uterine fibroid. The bladder wall was thin and, with the peritoneum, closely adherent to the fibroid uterus, which extended upward to the umbilicus. In attempting to separate the bladder wall from the tumor, the base of the former organ was torn. The tear was closed with a continuous catgut suture. Six days later the patient complained of a slight cough, tenderness along the

---

* From the Stanford University School of Medicine.

* Read before the Urology Section of the California Medical Association at the sixty-second annual session, Del Monte, April 24-27, 1933.

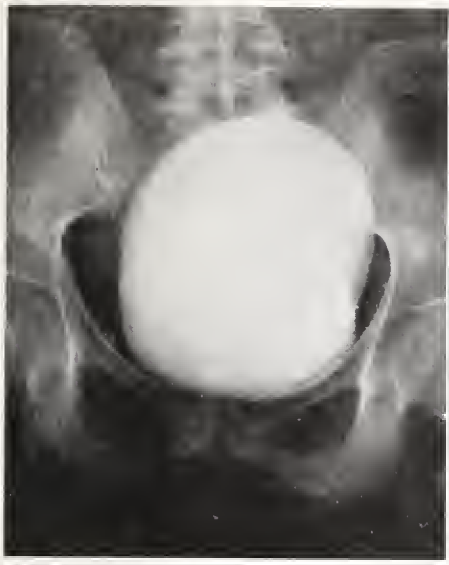


Fig. 1.—Distortion of the bladder following an interposition operation of the uterus.

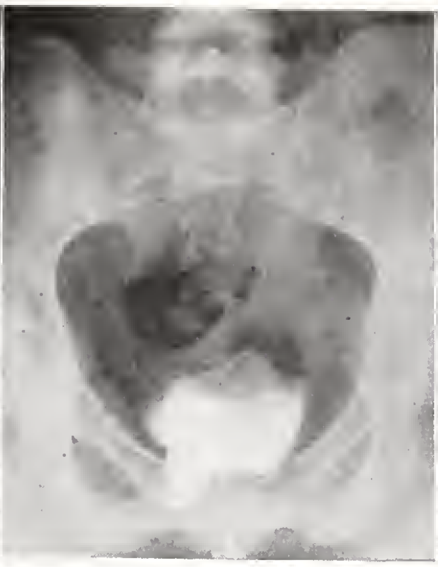


Fig. 2.—Marked distortion of the bladder following two operations for repair of a vesico-vaginal fistula.

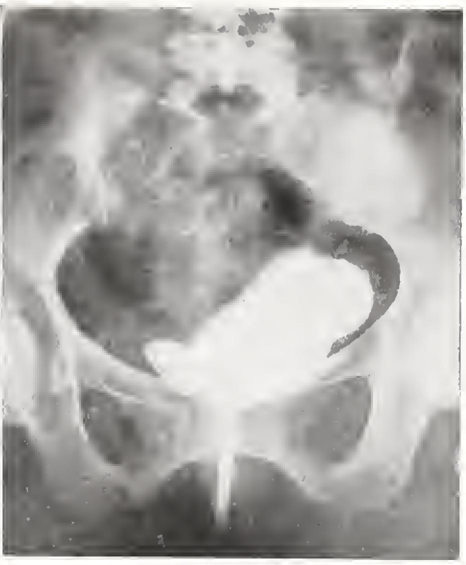


Fig. 3.—Marked distortion of the bladder following suspension of the uterus and bilateral oöphorectomy.

lower right costal margin anteriorly, and some pain on inspiration at the base of the right lung. Dullness on percussion, distant breath sounds, and some very fine râles were heard over this area. A diagnosis of pneumonia was made. Two days later the tenderness was more severe, some swelling was apparent in the kidney region, and the patient also complained of burning, frequent urination and pain in the right groin, worse on voiding. A catheterized specimen of bladder urine contained a large number of pus cells. Two hundred and forty cubic centimeters of residual urine were found. Cystoscopy revealed marked inflammation and edema of the bladder mucosa. The right ureteral orifice was not visible. Indigocarmin did not appear on either side within twenty-five minutes after intravenous injection. Operation was advised, but refused by the patient. Her condition gradually became worse, and one week later consent to operation was obtained. Following an oblique right lumbar incision, about 250 cubic centimeters of thick foul-smelling pus were evacuated. No pus was found inside the fatty capsule of the kidney. Some urine escaped through the wound for about six weeks after the operation. It was now possible to catheterize the right as well as the left ureter. The right kidney urine contained an occasional pus cell; the left was microscopically negative. Cultures from both showed colon bacilli. The patient made an excellent recovery after a prolonged convalescence.

* * *

Case 5.—A patient seen in consultation some time ago stated that urine had dribbled from her urethra since the removal of an abdominal tumor one and a half years previously. Examination revealed a vesico-vaginal fistula and urine dribbling from the vagina rather than from the urethra.

Tenderness in the suprapubic region, frequent urination, retention of urine, dysuria, and hematuria are common symptoms following most types of bladder injury. These symptoms are more apt to occur in the presence of a preoperative cystitis. The latter should receive appropriate treatment prior to gynecologic operations if possible. Extravasation of urine with subsequent infection is sometimes responsible for pain in the loins. This occasionally extends as high as the renal fossa in extraperitoneal injuries. When the opening is in the posterosuperior portion of the bladder, it usually communicates with the peritoneal cavity, and abdominal rigidity, as well as other symptoms of peritonitis such as nausea and vomiting, soon appear, especially if the urine is infected. Shifting abdominal dullness, due to urine in the peritoneal cavity, can sometimes be detected.

Intravenous urography is often a valuable diagnostic procedure when bladder injury is suspected. If this is not feasible, good cystograms may be obtained following the oral administration of sodium iodid as suggested by Osborne, Sutherland, Scholl, and Rountree[5] in 1923.

The advisability of injecting fluids into the bladder as a diagnostic procedure is questionable. It is not justifiable unless the surgeon is prepared to operate immediately.

TREATMENT

Recovery usually follows repair of the damaged bladder wall if detected at the time of injury. Later, if the symptoms are suggestive of bladder injury, or when in doubt, exploratory laparotomy is advisable. Delay in operating when the bladder opening is extraperitoneal, at best retards convalescence and often results in intense suffering. Intraperitoneal injury is usually rapidly fatal without operation. It may be permissible to postpone operation when there is sufficient drainage through an abdominal, rectal or vaginal fistula. The bladder wall should be closed with at least two rows of sutures, the first or deepest sutures being interrupted and including the entire wall with the exception of the mucosa. The other sutures may be continuous. A retention catheter should be inserted through the urethra and a urinary antiseptic given internally. If it is necessary to suture the bladder wall in the vicinity of the ureters, constriction of these organs should be avoided.

In the presence of extravasation of urine, free drainage is of the greatest importance.

The conditions following some types of bladder injury are often especially resistant to treatment. Many annoying postoperative symptoms would be avoided if infected bladders were appropriately treated prior to pelvic surgery.

REPORT OF CASES

Case 6.—A large rent was made in the fundus of the bladder during a hysterectomy and bilateral salpingectomy and oöphorectomy. It was closed with a double layer of chromic sutures. The abdominal wall was then closed without drainage. A profuse mucoid discharge appeared nine days later. The wound was drained, and after a period of two weeks, or twenty-four days after the operation, it had completely closed.

* * *

Case 7.—The bladder was accidentally opened during operation for excision of an old postoperative abdominal sinus and the freeing of a displaced uterus and bladder. It was closed with a double row of catgut sutures. A gutta-percha drain was placed in the space of Retzius. Two days later, however, urine escaped freely from the abdominal wound. Nineteen days after operation the wound had closed.

* * *

Case 8.—An incision was accidentally made in the bladder during an operation for tightening of the sphincter, anterior colporrhaphy, proctopexy, and perineorrhaphy. The wound was closed with two purse-string sutures. A retention catheter was inserted. Convalescence was uneventful.

* * *

Case 9.—The bladder wall was torn during a supravaginal hysterectomy. It was sutured and the abdominal wall was closed without drainage. The patient was catheterized every eight hours for the first four or five days. There were no postoperative symptoms.

* * *

Case 10.—The bladder was incised during a hysterectomy. The injury was not detected. A vesicovaginal fistula followed. This closed after a third attempt at repair. One month later the patient entered the hospital complaining of pain in the left kidney region and bladder. Ureteral catheters encountered obstructions just inside both ureterovesical orifices, and x-rays showed several stones in the left kidney and a probable stone in the left ureter. The patient was uremic. The left ureter was opened, but no stone found. This was five and a half months after the last operation for repair of the fistula. Death occurred three weeks later. At autopsy, in addition to advanced bilateral pyonephrosis, both ureters were found obstructed by scar tissue resulting from the previous operations on the vesicovaginal fistula.

* * *

Case 11.—In opening the peritoneum, preparatory to a right salpingectomy, oöphorectomy, the freeing of adhesions and an appendectomy, an incision about five centimeters in length was made into the bladder. This accident was apparently due to adhesions between the fundus of the uterus and the bladder, pulling the latter upward and forming a pouch. The incision in the bladder was immediately repaired and the abdominal wall closed without drainage. Convalescence was uneventful.

* * *

Case 12.—In isolating the right uterine artery during a hysterectomy, salpingectomy and oöphorectomy, an incision about one centimeter in length was made in the bladder wall. This was immediately closed. Convalescence was uneventful.

COMMENT

Summary of the eight cases in which the bladder was accidentally torn or incised:

Bladder injury occurred during hysterectomy in two cases; during hysterectomy and salpingectomy, or oöphorectomy or hysterectomy and both salpingectomy and oöphorectomy in two cases; during salpingectomy and oöphorectomy in two cases; during tightening of the bladder sphincter, colporrhaphy, proctopexy, and perineorrhaphy in one case; and during operation for excision of a sinus following cesarean section and freeing of adhesions to uterus in one case.

The bladder wall was incised in five, and torn in three cases.

The injury was detected at the time of operation in seven cases, and not detected in one case.

The wound was sutured in the seven detected cases, one with drainage of the wound and one with drainage of the bladder through a retention catheter.

Convalescence was uneventful in four and prolonged in three cases. Death eventually resulted from the bladder injury in one case as a result of bilateral pyonephrosis due to scar tissue obstructing the ureters following several attempts at repair of a vesicovaginal fistula.

CONCLUSIONS

Urinary tract infection should receive appropriate treatment prior to operative procedures.

The bladder and its attachments should be handled carefully during pelvic surgery.

While no serious consequences follow repair of the bladder wall when detected at the time of operation in the majority of instances, exceptions to this rule are not uncommon.

Convalescence is shorter in patients in whom drainage is used.

Accidental operative injuries of the bladder are not infrequently responsible for prolonged convalescence, and they are occasionally fatal.

870 Market Street.

REFERENCES

1. Hamer, H. G.: Injuries of the Bladder Incident to Surgery, Transactions of the American Association of Genito-Urinary Surgeons, page 345, 1931.

2. Graves, R. C.: Dean Lewis Surgery, Vol. 8, Chapter 13.

3. Muller, G.: Injury to the Bladder, Ureter and Vagina in Artificial Abortion, Zentralblatt für Gynec., 56:331, 1932.

4. Stevens, William E., and Arthurs, Elizabeth: The Female Bladder, J. A. M. A., p. 1656 (Nov. 22), 1924.

5. Osborne, E. D., Sutherland, C. G., Scholl, A. J., and Rountree, L. G.: Roentgenography of the Urinary Tract During the Excretion of Sodium Iodid, J. A. M. A., 80:368, 1923.

DISCUSSION

Robert V. Day, M. D. (1930 Wilshire Boulevard, Los Angeles).—Doctor Stevens has covered the subject so comprehensively and soundly that he has left little for anyone to add or contravert.

I wish especially to stress the effects on the bladder in many cases of the transposition or interposition operations. I have seen a number of unfortunate results following interposition operations done by men of undoubted skill, experience, and competency. Usually the base of the bladder is distorted, often presenting the picture of a mound pushing into the bladder base, accompanied with inflammatory infiltrate, ultimate infection and, in one case, superficial necrosis and bladder calculus.

In the operations of hysterectomy and on the adnexa, there are bound to be certain cases that tax the skill of the most experienced gynecologists, and no doubt an occasional accident involving bladder injury will continue to occur; and I think Doctor Stevens intends that these occurrences should be kept down to the minimum by exercising extreme care in their prevention. If immediately repaired and, for assurance sake, a very soft rubber drain is introduced down to the repair site, they almost invariably heal readily.

Injury produced by undue distention of the bladder with reflex retention postoperatively, mentioned casually by Doctor Stevens, is probably the most important trauma incident to pelvic (or other abdominal) surgery, and in the aggregate productive of infinitely more dire results than all other forms of surgical trauma, from the standpoint of effects on the bladder. What is ordinarily called and supposed to be "catheter trauma" (almost always blamed on the nurse or the intern) is not catheter trauma at all, but the result of neglected postoperative overdistention. It occurs because the patient has not been catheterized soon enough, often enough, or over a sufficiently long period. That is to say, if there is any doubt about using the catheter, it should then always be used. Moreover, its use should not be discontinued just because the patient has begun to void. Such voiding is apt to be just overflow. In other words, intermittent catheterization should be continued until it has been actually demonstrated that the patient can empty the bladder when she voids. The method of instilling irritant drugs, such as mercurochrome solution, etc., on the theory (which sometimes works) that it will cause the patient to void, is a vicious and unjustified practice.

⁂

Lionel P. Player, M. D. (384 Post Street, San Francisco).—Doctor Stevens' presentation is clear and concise. The small percentage of these surgical accidents reported is indeed surprising, especially in pelvic operations, where the proportion was three in 1,086 unselected cases. One could account for this fact in a measure, when he considers the extreme vascularity of the bladder wall, and might reasonably believe that small puncture wounds may be closed unknowingly; but sufficiently, when sutures or ligatures are applied to the bleeders, thereby preventing urine leakage.

Recognition at the time of injury, with proper suturing, drainage at and around the involved area, plus urethral indwelling catheter, is almost invariably effective and free from serious aftermath. The unrecognized cases due to any type of injury at operation, where the urine is infected or burrowing occurs along the deeper fascial planes with obscure symptoms, are serious, but respond to drainage. The great menace is presented when the peritoneal cavity is invaded with attendant peritonitis. In these cases the prognosis is grave, unless the condition is recognized and operated without delay.

In regard to the matter of retrograde cystographic studies, let me say that on several occasions I have not hesitated in accidental injuries to inject isotonic sodium iodid solution, if intravenous pyelocystographic media were not obtainable, with no ill effect.

Certain urinary antiseptics may be given intravenously when not tolerated by oral administration. The importance of free drainage by retention catheter, and at the site of injury, has been amply emphasized by the author.

⁂

Harry W. Martin, M. D. (6253 Hollywood Boulevard, Los Angeles).—As Doctor Stevens has stated, the incidence of bladder injury following operations is more frequent than has been reported.

A careful questioning of a number of gynecologists fixes the incidence of bladder injury at about one-half of one per cent. This may seem unusually large, but it will at least throw a light on the frequency.

I have seen two serious cases of necrosis of the bladder wall due to radium treatment of the rectum, and also two cases where the bladder was injured during a cautery operation in the abdomen.

As Doctor Stevens has stated, the majority of these cases have an uneventful recovery if the bladder is repaired immediately.

Too much stress cannot be made on the subject of appropriate treatment for urinary tract infections prior to surgery, and also gentle handling of the bladder and ureters during operations.

There have been seven cases in one of the large hospitals (five of whom were in males) where the bladder has been completely burned through by the use of the spark-gap current; and also several cases where the bladder has been ruptured, following the distention of the bladder with fluids by the syringe method.

TREATMENT OF NECK GLANDS IN CANCER OF LIP, TONGUE AND MOUTH*

A STUDY OF PRESENT-DAY PRACTICE

By Otto H. Pflueger, M. D.
San Francisco

When the Cancer Commission of the California Medical Association was formed, it undertook as its first problem a survey of the field of cancer, with the preparation of statements of the minimum requirements for adequate diagnostic and therapeutic procedures; this information to be made available to the medical profession in California. To this end clinical committees were formed to assemble the data concerning the various fields of cancer. It was felt that differences of opinion would undoubtedly arise in committee discussions but that these could be overcome in the laying down of acceptable alternate procedures.

As stated in the report of the Committee on Skin and Mouth Tumors,† an irreconcilable difference of opinion arose over the proper procedure of treatment to be followed in dealing with the lymph node bearing area in lip and intra-oral epitheliomata. It was possible to reach agreement upon the treatment of the primary lesion by suggesting alternate acceptable methods of procedure, men preferring one method, agreeing, nevertheless, that other methods are acceptable. Agreement was also reached upon the care of palpable lymph node metastasis, the consensus of opinion being that adequate surgical removal, together with irradiation, is the procedure of choice when the glands are operable. However, upon the question of whether dissection of the neck should be performed in the absence of palpable metastatic glands, it was impossible to reach agreement.

One group felt strongly that in cancer sufficiently advanced to suggest the probable presence of metastasis, for example, in lip cancer when invasion has reached the underlying muscle, the gland-bearing area should always be cleaned out surgically even though no glands could be felt. On the other side, opinion was just as strong that conservative care offered equally good results—such care being prophylactic radiation to the node area, with careful observation of the patient. If a node becomes palpable, dissection of the neck should be performed.

In the face of such irreconcilable difference of opinion, the Commission undertook to ascertain the present-day practice of cancer authorities throughout the world. Questionnaires were sent to forty surgeons, radiologists, dermatologists, and cancer clinics in Europe and America, to which thirty responses were received—constituting, we believe, a fair number for the basis of this discussion.

A questionnaire at best is not a perfect means of obtaining information, for the answering of one frequently calls for a good deal of qualification which is not stated. We feel, however, that the responses in general indicate the modes of treatment as carried out, though some variation may be made in occasional cases.

---

* Being a report by the secretary of the Committee on Professional Information of the California Medical Association, Cancer Commission.

† California and Western Medicine, Vol. XXXIX, No. 2, p. 136, August, 1933.

A tabulation and summary of the replies show that there is disagreement throughout the world corresponding to that of our own committee. The question, therefore, still remains to be settled, even though there is now a definite leaning toward conservatism in the absence of palpable glands. The present report is a detailed study of the replies received, and is concerned purely with procedures carried out by those replying, making no comparison of their mortality and cure-rate statistics.

A perusal of the accompanying tables will show that in only a few instances is the treatment varied by the correspondents according to the location of the primary lesion on lip, tongue, or buccal mucosa. In other words, the treatment of the glandular area is the same, regardless of the original site, except in a few instances.

GLANDS NOT PALPABLE

The source of the difference of opinion with regard to treatment of the glandular area, as mentioned above, is largely in those cases in which no glands can be palpated, the consensus of opinion when glands are palpable being that glandular dissection should be performed. In the former case we find that approximately two-thirds of the correspondents do not do routine dissection of the cervical nodes. This is a very definite trend toward conservatism. What are the reasons for this attitude, which is so different from the teaching of Halstead, who insisted on extensive dissection of the glandular area in all cases? In the first place, a large percentage of examined material from neck dissection shows no involvement of the glands by cancer, which means that an operation as extensive as a neck dissection has been unnecessarily done; furthermore, many cases of intra-oral carcinoma never do develop metastatic nodes during the course of the disease. Secondly, metastasis to the regional cervical nodes occurs by embolus and is limited usually to a single node or, at most, a limited group of nodes. These then act as sieves and filter out the emboli, providing a very definite protective mechanism, which is lost if dissection is performed before the primary lesion is adequately cared for. It is felt that the removal of a palpable gland, the capsule of which is not broken, offers just as much hope as the removal of an impalpable one containing a microscopic metastasis which will develop. It is stated also by some that many of these emboli do not give rise to secondary tumor growths, but are adequately disposed of by the lymph node. These appear to be the main reasons for conservatism, advanced by those who practice it. It must be apparent that this manner of treatment can only be undertaken with a patient over whom there is the closest control; one who can be observed at frequent intervals over a period of years. Furthermore, the patient must be warned of the possible development of a lump in the neck and told to report at the first sign of one.

Those who believe that dissection of the neck should be performed in all cases of intra-oral and lip carcinoma, even when glands are impalpable, have also definite reasons for doing so. The adequate treatment of cancer requires the removal of all malignant cells, and this can best be accomplished by excision of the tissue which is most likely to contain tumor cells, namely, the regional nodes, as early as possible, just as in the breast. Even though glands cannot be felt, metastasis may be present. Knowing that many of these cases are operated upon unnecessarily because no metastases are found on microscopic examination, it is felt, nevertheless, that operation must be done because it is impossible to determine beforehand which cases have involvement and which have not. The fact that a number of patients return with cured primary lesions and inoperable cervical nodes constitutes another reason for immediate operation. Another consideration is this, that in lip cancer without metastasis proper treatment gives nearly 100 per cent cures. If one gland is involved, cures average only 70 per cent, and with two or more glands involved the average cure drops to 40 per cent. If, then, a gland is involved but is not palpable, and one waits until it becomes palpable, it is then likely that there is not one but two involved glands, and the chances of cure have dropped from 70 to 40 per cent. The operative mortality of radical neck dissections alone (not suprahyoid dissection) is around 4 to 5 per cent.

It appears, then, that there is a difference of opinion throughout the world corresponding to that of our own committee, with regard to treatment of the neck in lip and intra-oral cancer when no nodes are palpable. There is, however, a definite trend toward giving radiation and pursuing a policy of watchful waiting rather than subjecting each such unfortunate individual to an extensive neck dissection.

RADIATION

We find from the responses that radiation plays a large part in the treatment of the glandular area. The majority of those who do not perform dissection of the neck when no nodes are palpable use external radiation by either x-ray or radium, or both. Thus, in cancer of the lip, out of twenty that do not dissect the nodes, fourteen irradiate the neck. In cancer of the tongue and buccal mucosa the percentage is even larger; eighteen out of nineteen in the tongue, and nineteen out of twenty-two in mucosa of the cheek cases. In both of these, three of them state that they irradiate some of the patients, but not all.

The kind of irradiation that is given may be of interest. Taking the tongue cases, it is noted that the responses are as follows: x-ray or radium (the latter preferred), two; radium alone, four; x-ray alone, seven; either x-ray or radium, two; both x-ray and radium, two; while one does not mention the type of irradiation used. These men use the same type for the other cases, when used at all.

The definite value of this so-called prophylactic radiation (so named when no glands are palpable)

CHART 1.—*Cancer of the Lip*

	Glands Not Palpable		Glands Palpable	
	Dissection	Other Treatment	Dissection	Other Treatment
1. Berven	No	Radium (preferably). X-ray also.	No, only if glands do not disappear with radium.	Radium by choice.
2. Burnam	No	None	Yes, bilateral suprahyoid and carotid glands with frozen section.	Preoperative
3. Cade	No	Radium	Yes	Postoperative. Preoperative occasionally.
4. Eller	No	X-ray	Yes	Preoperative and postoperative.
5. Grossmann	No	Radium or x-ray, as lesion is infiltrating or superficial.	Yes	Postoperative when glands involved.
6. Henry	No	External radium to desquamation always.	Yes	Postoperative
7. Jones	No	None routinely.	Yes	Preoperative
8. Juul	No	None	Yes, when not fixed.	Preoperative when glands not easily removed. Postoperative often.
9. Laborde	No	None	Yes	Postoperative
10. MacKee	No	X-ray, erythema.	Yes	Preoperative and postoperative.
11. Maisin	No	X-ray or radium.	Yes	Preoperative sometimes. Postoperative always.
12. Paterson	No	None	Yes	None
13. Pfahler	No	X-ray or radium (preferable).	No	Radiation only. Implants in hard glands.
14. Pirie	No	X-ray and radium.	Yes	Preoperative and postoperative.
15. Quick	No	X-ray. Sometimes pack.	In operable cases.	Preoperative. Radiation only in inoperable cases. (Implants and external.)
16. Richards	No	X-ray and radium (both).	If do not disappear with radiation or are larger than beans.	Preoperative and postoperative.
17. Simpson	No	X-ray, full erythema.	No	Depend on radiation.
18. Stebbing	No	External radiation, radium or x-ray, radium preferred.	No	Postoperative
19. Sutton	No	None	Yes	Preoperative and postoperative.
20. Wallace	No	Surface radiation, radium.	Yes	Postoperative, preoperative occasionally.

	Glands Not Palpable			Glands Palpable	
	Dissection	Extent	Other Treatment	Dissection	Other Treatment
21. Bloodgood	Yes	Submental and submaxillary triangle.	None	Yes	Preoperative in late cases.
22. Coller	Yes	Bilateral suprahyoid.	If metastatic glands found.	Yes	Postoperative
23. Handley	Yes	Bilateral suprahyoid.	Implants in unsuitable operative cases.	Yes	Postoperative implants if glands fixed.
24. Hazen	Yes; late cases. No; early cases.	Block dissection.	Following operation.	Yes, if unilateral and hard.	Postoperative
25. Jeanneney	Yes; large ulcerated primary. No; very small primary.	Suprahyoid	None	Yes	Postoperative sometimes.
26. Jorstad	Yes	Bilateral suprahyoid.	None	Yes	Postoperative where complete removal impossible.
27. Mayo Clinic	Yes	Bilateral suprahyoid.	If metastatic glands found.	Yes, frozen section for extent.	Preoperative and postoperative.
28. Morison	Sometimes	Submaxillary region.	Radium sometimes.	Sometimes	Preoperative occasionally; postoperative always.
29. Pichler	Yes	Submental and submaxillary triangle.	Usually not.	Yes	Postoperative
30. Simmons-Greenough	Yes	To bifurcation carotid.	None	Yes	None

Chart 2.—*Cancer of the Tongue*

	Glands Not Palpable		Glands Palpable	
	Dissection	Other Treatment	Dissection	Other Treatment
1. Berven	No	Radium only.	No, only if glands do not disappear with radium.	Radium by choice.
2. Bloodgood	No	In more extensive cases.	Yes	Preoperative at times.
3. Burnam	No	Prophylactic radiation. Sometimes nothing. X-ray or radium.	Yes Block dissection (Not in Grade A)	Preoperative and postoperative.
4. Cade	No	Radium interstitial followed by external.	Yes, if operable and primary healed.	Postoperative
5. Coller	No	X-ray	Yes	Postoperative
6. Eller	No	X-ray	Yes	Preoperative and postoperative.
7. Hazen	No	X-ray, double efficacy. No in cancer of tongue.	No use.	Implants
8. Juul	No	Not when primary surgically treated—x-ray when treated by radiation (Coutard).	Yes When not fixed.	Postoperative often, preoperative when glands not easily removed.
9. MacKee	No	X-ray—erythema.	Yes	Preoperative and postoperative.
10. Laborde	No	None	Yes	Postoperative
11. Maisin	No	X-ray or radium.	Yes	Preoperative sometimes, postoperative always.
12. Pfahler	No	X-ray or radium (preferably)	No	Radiation only. Implants in hard glands if they do not disappear.
13. Pirie	No	X-ray and radium.	Yes	Preoperative and postoperative.
14. Quick	No	X-ray, sometimes pack.	In operable cases.	Preoperative, radiation only in inoperable cases external and implants.
15. Richards	No	X-ray and radium together.	Yes, complete block.	Preoperative and postoperative.
16. Simpson	No	X-ray, full erythema.	No	Depend on radiation.
17. Stebbing	No	External radiation. X-ray or radium.	Yes	Preoperative if extensive. Postoperative.
18. Sutton	No	Radium externally.	Depends on individual circumstances.	Preoperative and postoperative if operation done.
19. Wallace	No	Radium	Yes	Postoperative radiation. Preoperative occasionally.

	Glands Not Palpable			Glands Palpable	
	Dissection	Extent	Other Treatment	Dissection	Other Treatment
20. Grossmann	Yes. In long standing postoperative lesions.	Block dissection.	Radium. X-ray sometimes (with superficial circumscribed lesions of short duration.)	Yes If movable.	Postoperative when glands microscopically involved and if patient's condition good.
21. Handley	Yes	Bilateral block without jugular unless posterior two-thirds of margin of tongue primary.	Implants if general condition contraindicates operation. Ten to twenty two-milligram tubes seven days.	Yes	Postoperative implants if glands fixed. Implants if glands irremovable.
22. Henry	Yes	Block dissection if unilateral lesion with submaxillary area on other side.	Radium	Yes	Postoperative
23. Jeanneney	Yes	Unilateral carotid and submaxillary.	Postoperative x-ray.	Yes	Postoperative always.
24. Jones	Yes	Block dissection. Bilateral if primary in midline.	Occasional prophylactic radiation.	Yes	Preoperative
25. Jorstad	Yes	Bilateral block is ideal.	None except in inoperable cases. Wait when primary has not responded to treatment.	Yes	Postoperative when complete removal is impossible.
26. Mayo Clinic	Yes	Bilateral suprahyoid and deep cervical on involved side.	Prophylactic radiation.	Yes. Frozen section determines extent of operation.	Preoperative and postoperative.
27. Morison	Sometimes	Block dissection.	Radium externally sometimes.	Sometimes	Preoperative occasionally. Postoperative always.
28. Paterson	Yes	Crile block dissection.	None	Yes. If operable.	None. Radiation if inoperable.
29. Pichler	Yes	Bilateral suprahyoid.	Usually not.	Yes	Postoperative
30. Simmons-Greenough	Yes	Radical. Rarely upper triangle only.	None	Yes	None

CHART 3—*Cancer of the Buccal Mucous Membrane*

	Glands Not Palpable		Glands Palpable	
	Dissection	Other Treatment	Dissection	Other Treatment
1. Bloodgood	No	In more extensive cases.	Often	Preoperative and postoperative. Sometimes radiation only.
2. Berven	No	External radium only.	No, only if glands do not disappear with radium.	Radium by choice.
3. Burnam	No	Sometimes prophylactic radiation.	Yes, not in Grade 4.	Preoperative and postoperative.
4. Cade	No	X-ray and radium. Implants occasionally.	Occasionally	Postoperative
5. Coller	No	X-ray.	No	Depend on radiation.
6. Eller	No	X-ray.	Yes	Preoperative and postoperative.
7. Grossman	Usually not	Radium (large lesion longer duration) or x-ray (small lesion short duration).	Yes, if movable.	Postoperative when gland is microscopically involved and when uninvolved and patient cannot be followed.
8. Henry	No	X-ray and radium.	Yes	Postoperative
9. Jones	No	X-ray, prophylactic.	Yes	Preoperative
10. Juul	No	None when primary surgically treated; x-ray (Coutard) when treated by radiation.	Yes, when not fixed.	Preoperative when glands not easily removed; postoperative often.
11. Laborde	No	None.	Yes	Postoperative
12. MacKee	No	X-ray, erythema.	Yes	Preoperative and postoperative.
13. Maisin	No	X-ray or radium.	Yes	Preoperative sometimes. Postoperative always.
14. Pfahler	No	X-ray or radium (preferably).	No	Radiation only. Implants in hard glands if do not disappear with external treatment.
15. Pichler	No	None.	Yes	Postoperative
16. Pirie	No	X-ray and radium.	Yes	Preoperative and postoperative.
17. Quick	No	X-ray, sometimes pack.	In operable cases	Preoperative. Radiation only in inoperable cases (external and implants).
18. Richards	No	X-ray and radium together.	Yes	Preoperative and postoperative.
19. Simpson	No	X-ray, full erythema.	No	Depend on radiation.
20. Stebbing	No	External radiation—radium or x-ray—radium preferred.	Yes	Postoperative. Radiation only if extensive.
21. Sutton	No	None.	Often	Preoperative and postoperative. Sometimes radiation only.
22. Wallace	No	Radium.	Yes	Postoperative radiation. Preoperative occasionally.

	Glands Not Palpable			Glands Palpable	
	Dissection	Extent	Other Treatment	Dissection	Other Treatment
23. Handley	Yes	Complete unilateral block dissection.	Implants if general condition contraindicates operation or patient refuses. As in tongue.	Yes	Postoperative implants if glands fixed. No preoperative.
24. Jeanneney	Most often. Not if primary very small.	Carotid chain and submaxillary.	None	Yes	Postoperative
25. Jorstad	Preferably	Lymph-bearing area draining site.	None	Yes	Postoperative if surgical removal incomplete.
26. Paterson	Yes	Crile block dissection	None	Yes if operable.	None. Radiation if inoperable.
27. Mayo Clinic	Yes	Submental and submaxillary glands.	Prophylactic radiation depends on the growth.	Yes. Frozen section determines extent of operation.	Preoperative and postoperative.
28. Morison	Sometimes	Block dissection sometimes limited to upper cervical.	Radium sometimes.	Sometimes	Preoperative occasionally; postoperative always.
29. Simmons-Greenough	Yes	Depends on situation and type of tumor.	None	Yes	None

is difficult to determine. With nodes impalpable the assumption is that metastasis has not occurred. Why, then, irradiate the area? Because the feeling is present, but difficult of proof, that the resistance of the nodes to metastatic spread is thereby increased. On the other hand, if an impalpable node already contains cancer it is very doubtful that external radiation alone, as given prophylactically, will destroy it; in fact, it is quite improbable. We see primary lesions cured by heavy external radiation that has no effect upon a metastatic gland in the neck. And such heavy radiation is usually not given prophylactically. This is neither condemnation nor appraisal; its real value remains to be determined. That it is of value is suggested, of course, by the large percentage that use it, and one hesitates to lay down any weapon that may aid in the treatment of cancer.

When dissection is routinely performed, less reliance is placed upon irradiation. Of ten correspondents doing dissections in lip cases, nine do not use radiation in any form except some who use postoperative if a metastatic gland is found. In the buccal mucosa cases, five out of seven do not use it, and the other two do so only sometimes. In the tongue cases approximately half combine irradiation with the routine neck dissection.

PALPABLE GLANDS

The fact that one or more lymph glands are palpable is not definite evidence that they are involved by cancer. An impalpable node may contain embolic cancer cells. On the other hand, the infection that is usually associated with ulcerating cancer causes hyperplasia of the nodes, making them palpable. All palpable nodes do not, therefore, contain cancer. Those that do are harder than uninvolved nodes. This distinction between metastatic and inflammatory nodes is exceedingly difficult to make, however, and most men feel that it should not be attempted. Approximately one-third of our correspondents try to distinguish between hard and soft nodes, postponing dissection if these are felt to be inflammatory. This comparatively large figure surprises us, and we are inclined to feel that withholding of surgery is not for long. We do not believe that metastatic nodes can be made to disappear by external irradiation, of one or two erythema doses, whereas inflammatory nodes may.

As mentioned earlier, our committee agreed that dissection should be performed for palpable metastatic glands. This is the consensus of opinion of most men dealing with intra-oral cancer. With the exceptions noted above, this is for all palpable nodes that are operable, and this study applies only to operable nodes. Of course, ideas of operability differ, but we feel that with the increase in knowledge of what can be expected with judiciously applied radiation, both external and interstitial, the limits of operability will be more sharply drawn.

Thus we find that practically all dissect out the glandular area when metastatic nodes are palpable, only two relying entirely upon irradiation in the lip cases. These same two men and one other use irradiation only in those cases where the primary lesion is in the tongue or buccal mucosa. Of those that perform dissection, a small number state that sometimes they irradiate only, to the exclusion of surgical removal. On what their selection of cases is based, we cannot determine from the questionnaire.

The treatment is usually irradiation combined with dissection; one fourth, however, using no supplementary treatment when operable nodes are completely removed in cases of cancer of the lip. Such remarks as "preoperative in late cases" and "postoperative where complete removal impossible" are interpreted as meaning that no irradiation is given when it is felt that nodes can be or are entirely removed; in other words, are operable. Only four men use no irradiation under the same conditions in cancer of the tongue or buccal mucosa. There are different manners of giving this irradiation. A very limited number—three, in fact—confine themselves to preoperative treatment. The rest are about equally divided between postoperative alone and a combination of preoperative and postoperative irradiation.

We have endeavored to evaluate the responses as correctly as possible, realizing that a certain amount of qualification is necessary in the answers. For this reason we have included the tables of responses, leaving each reader to judge for himself the treatment given by each individual.

CONCLUSIONS

Cancer of the Lip.

1. Glands not palpable:

(*a*) In cancer of the lip of sufficient size, duration or microscopic evidence of deep invasion to suggest possible metastasis, two-thirds of the correspondents do not do routine dissection of the lymph glands (twenty versus ten); in other words, two-thirds maintain a conservative attitude.

(*b*) Of the group which maintains a conservative attitude, approximately two-thirds give prophylactic irradiation to the cervical glands (fourteen versus six). This is done either by x-ray or radium packs, or by a combination of both.

(*c*) Practically all of those that do routine dissections of the cervical glands do not give prophylactic irradiation except some that give it if microscopic evidence of glandular involvement is found.

(*d*) The operation most commonly performed where glands are not palpable is a bilateral suprahyoid dissection, this being carried further in some instances if microscopic glandular involvement is found.

2. When glands are palpable:

(*a*) In cancer of the lip when glands are palpable and operable (movable, hard, and not involving both sides to the clavicle), the neck is dissected in by far the greater number of instances, only two depending entirely upon irradiation for the handling of metastatic glands.

(*b*) Irradiation in some form is usually given; only six giving no radiation whatsoever if the glands have been completely removed. Radiation is divided about equally into postoperative alone

Table 1.—*Cancer of the Lip*

	Glands Not Palpable				Glands Palpable*		
	Yes		No		Yes		No
Dissection	10		20		25		2
Radiation	Yes 1	No 9	Yes 14	No 6	Yes 19	No 6	

* The discrepancy in the figures here is due to the fact that one answered "sometimes." Two stated that dissection is performed if the glands do not disappear following external radiation.

or a combination of preoperative and postoperative radiation. Only four limit themselves to preoperative radiation.

(*c*) Two men responded that they do dissections if the glands do not disappear following irradiations.

(*d*) Slightly more than one-third attempt to distinguish between hard (metastatic) and soft (inflammatory) glands, withholding surgical dissection if the glands are felt to be inflammatory.

Table 2.—*Cancer of the Tongue*

	Glands Not Palpable				Glands Palpable*		
	Yes		No		Yes		No
Dissection	11		19		24		3
Radiation	Yes 6†	No 5	Yes 18‡	No 1	Yes 20	No 4	

* One stated that dissection is performed if the glands do not disappear with irradiation. Two stated that dissection is sometimes performed. These give irradiation also if operation is done.
† Two of these sometimes.
‡ Three of these only sometimes.

Cancer of the Tongue.

1. When glands are not palpable:

(a) In cancer of the tongue which is early suspected of metastatic involvement, approximately two-thirds do not do a dissection of the cervical glands when none are palpable. (Nineteen versus eleven.)

(*b*) Of those not doing routine dissection, almost all give radiation to the lymph gland bearing area. (Fifteen versus one; three sometimes.)

Table 3.—*Cancer of the Buccal Mucosa*

	Glands Not Palpable				Glands Palpable*		
	Yes		No		Yes		No
Dissection	7		22		21		3
Radiation	Yes 0	No 7†	Yes 19‡	No 3	Yes 17	No 4	

* One performs dissection if the glands do not disappear following irradiation. Four do a gland dissection at times, and at other times irradiate only to the exclusion of surgery. These all use radiation when surgery is done.
† Two of these sometimes irradiate.
‡ Three of these only sometimes.

(*c*) Of those that do routine dissections, prophylactic radiation is given to the neck by about half. (Six versus five.)

(*d*) The most common operation is a unilateral block dissection to the clavicle; some, however, doing a bilateral block dissection and others a unilateral block dissection, with a suprahyoid dissection on the opposite side.

2. When glands are palpable:

(*a*) In cancer of the tongue, when glands are palpable and operable, by far the greater number do a neck dissection, only three depending entirely upon radiation for the cancer of metastatic cervical glands.

(*b*) Radiation of some type is given in practically all instances where surgery is done for palpable glands, only four giving no irradiation when operable glands are completely removed.

(*c*) Approximately one-half of those giving radiation limit themselves to postoperative irradiation, the other half using a combination of preoperative and postoperative. Only three limit themselves to preoperative irradiation.

(*d*) Two-thirds make no distinction between hard and soft glands.

Cancer of the Buccal Mucous Membrane.

1. When glands are not palpable:

(*a*) In cancer of the buccal mucous membrane of sufficient size and duration to suggest metastasis to the cervical glands, three-fourths of those responding do not dissect the neck when glands are not palpable. (Twenty-two versus seven.)

(*b*) Of those that do not do routine cervical dissections, prophylactic irradiation is given by the large majority. (Nineteen versus three.)

(*c*) When routine dissection is performed, prophylactic irradiation is usually not given.

(*d*) The operation usually performed is a unilateral block dissection; about 30 per cent, however, limiting themselves to the upper cervical glands.

2. When glands are palpable:

(*a*) In cancer of the buccal mucosa, when operable and palpable glands are present, the greater number perform a neck dissection, only three depending entirely upon radiation.

(*b*) When operation is performed for palpable, operable glands, irradiation in some form is given as a part of the treatment in most instances, only four giving none.

(*c*) The type of radiation is equally divided between postoperative alone and a combination of the preoperative and postoperative. Three limit themselves to preoperative entirely.

384 Post Street.

HUMAN AMEBIASIS

A REVIEW OF 700 CASES EXPRESSING 1961 COMPLAINTS

By Luther Musson Boyers, M. D.
Berkeley

A GROUP of seven hundred individuals, all later found to have chronic amebiasis, expressed 1961 definite presenting complaints when seeking medical care in California. This number is well

Table 1.—*Patient's Own Estimate of Present Status*

1	2		3		4		5		6		7
Category	"Normal" or Apparently No Change		Slight Change, Normality Questionable or Status Variable		Definitely Subnormal or Impaired Status		Summation of Colums 3 and 4		Unclassified or Miscellaneous		Total Number of Expressions
	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	
Appetite	219	55.87	116	29.59	38	9.69	154	39.28	19	4.85	392
Digestion	130	41.01	71	22.40	28 (Nausea) 27 (Pain) 61 (Gas)*	8.82 8.52 19.25	187	58.99	....	....	317
Bowel habit	96	24.06	....	....	113 (Constipation) 31 (Mucus) 28 (Diarrhea) 25 (Blood) 18 (Blood and mucus) 17 (Diarrhea and constipation) 7 (Gas)*	28.32 7.77 7.02 6.27 4.51 4.26 1.75	239	59.90	64	16.04	399
Sleep	159	42.63	53	14.21	161	43.16	214	57.37	....	....	373
Central nervous system	43	20.97	....	....	143	69.76	143	69.76	19 (Headache) and (backache)	9.27	205
Memory	67	31.90	48 (Variable or poor)	22.86	95	45.24	143	68.10	....	....	210
Morale	108	33.85	....	....	192	60.19	192	60.19	19	5.96	319
Muscular strength	163	44.41	63 (Variable or poor)	17.17	141	38.42	204	55.59	....	....	367
Sexual status....	121	55.25	38	17.35	55	25.11	93	42.46	5	2.29	219
Frequency of Urination	335	85.68	....	....	47 (Burning, pain or frequency)	12.02	47	12.02	9	2.30	391
Weight	73 (Gain) 104	22.81 32.50	9	2.81	95 (Loss)	29.69	104	32.50	39	12.19	320

* Refers to a degree of flatulency considered abnormal or distressing by the patient.

distributed among a larger number of other cases of amebiasis less well studied between the years 1919 and 1933.

In making the present analysis of these California patients, wherever possible the patient's own words have been given. In a fair number of instances these quotations are actual diagnoses completely filling the patient's horizon and representing the medical opinion of former consultants, or of physicians themselves seeking advice and care as patients. An attempt has been made in this study to distinguish carefully between the spontaneous, so-called, presenting complaints, and a more detailed enumeration of signs and symptoms elicited by direct questioning, and recorded under the heading of "Patient's Own Estimate of Present Status."

In making these clinical studies my thanks are due to many individuals working with problems involving the human alimentary tract. Express acknowledgment is due C. A. Kofoid, Ph. D., chairman of the department of zoölogy of the University of California; Olive Swezy, Ph. D., and the numerous other members of the staff of this department. Acknowledgment is also due R. T. Legge, M. D., director of the Cowell Memorial Hospital, University of California, for criticism in the preparation of this paper.

COMPLAINTS DIVIDED INTO TEN GROUPS

In the present analysis, it is possible to classify the 1961 complaints from 700 patients into ten groups showing roughly the anatomical system involved and its percentage, as follows:

	Per Cent
1. Complaints referable primarily to the gastro-intestinal tract, representing	39.27
2. Complaints referable to the neuromuscular system, representing	25.49
3. Complaints referable to bones and joints, representing	13.67
4. Complaints referable to the respiratory system, representing	5.30
5. Complaints grouped under miscellany, representing	4.59
6. Complaints referable to the genito-urinary system, representing	3.52
7. Complaints referable to heart and blood vessels, representing	2.60
8. Complaints referable to skin and mucocutaneous areas, representing	2.50
9. Complaints referable to eyes and ears, representing	1.94
10. Complaints referable to glandular system, representing	1.12

DIFFERENT COMPLAINTS MADE BY THE SEVEN HUNDRED PATIENTS

The actual complaints as expressed, without prompting from the examiner, follow:

	Number of Complaints	Percentage of 1961 Complaints
1. REFERABLE TO THE GASTRO-INTESTINAL TRACT:		
"Amebic infection" (41); Amebae found in feces through examination after contact with infected member of family (6)	47	2.40
"Colitis"	9	.46
Constipation ("severe," "obstinate," "lifelong," "hard, bullet-like feces," etc.)	139	7.09
Pain ("soreness," "cramps," etc.)	95	4.84
Bowel-conscious ("sense of weight in abdomen," etc.)	18	.92
Diarrhea or "dysentery" ("mushy stools," etc.)	89	4.54
Flatulence or "gas"	75	3.82
Nausea (38); vomiting (8)	46	2.34
Blood in feces	37	1.89
Mucus in feces	29	1.48
"Indigestion" (29); "Stomach trouble" (24); "Digestive disturbance" (17); "Intestinal upsets" (3); "Logy' or uncomfortable after eating (3)	76	3.88
"Bilious" (9); "Liver trouble" (2); "Sluggish" (2); "Auto-intoxication" (1)	14	.71
"Piles" or hemorrhoids	19	.97
"Grumbling" in stomach and bowel (4)	4	.20
Abdomen bloats (4); Patient "feels puffed up" (2)	6	.31
Pain in region of gall-bladder (5); "Gall-bladder disease" (3)	8	.41
"Bad," "bitter," or "peculiar" taste in mouth, and "inside of mouth is like sandpaper" (10)	10	.51
"Halitosis" or bad breath (5); Tongue coated (5); (Patchy) soreness of tongue (2); Gums occasionally very sore; Flesh and lower gums sore to touch	14	.71
Lack of appetite	9	.46
"Fistula" (1); "Fissure" (1); "Straining at stool" or tenesmus (2); "Erratic bowel habit" (1); Frequent evacuations (1) "Duodenal ulcer" (1); "Diverticulitis"—"Stricture of the bowel above the sigmoid" (1); "Poor control of sphincter" (1); "Pocket in stomach" (1)	10	.51
"Have to be careful about eating" (1); "Much nervousness in stomach and bowel" (1); "Food I eat does me no good" (1); Has been told that HCl of stomach is too low (1)	4	.20
"Summer complaint" (1); "Hyperacidity" (1); "Acidosis" (1); "Fermentation" (1); Has been told that the stomach is placed too low (1); "Thirsty—takes little fluid" (1)	6	.31
Very thirsty—"For days takes nothing but water" (1); Thinks self sensitive to tea (1); "Hungry all the time" (1); Small mass size of apricot in region of gall-bladder—not sensitive (1); Hard mass in grip of anus (1); cramp in upper abdomen (1)	6	.31
Total complaints referable to the gastro-intestinal tract	770	39.27

* * *

	Number of Complaints	Percentage of 1961 Complaints
2. COMPLAINTS REFERABLE TO THE NEUROMUSCULAR SYSTEM:		
Nervous (*e. g.*, "Nerve depletion," "Nervous wreck," "nervous breakdown," etc. (41) Irritable (7); Mental worries (1); "Neurasthenia" (2); "Psychoneurosis" (1)	52	2.65
Depression or "lassitude" ("blue," "low," etc.)	25	1.27
Lacks "pep" ("general peplessness," "lack of vitality," etc.)	22	1.12
Lack of motive power ("more will-power than muscle") (2); Below par ("feels run down") (13)	15	.76
"Faintness" (4); "Feels dazed or half-asleep" (1); "Attack in which loses self during a few minutes every few months" (1); "Waves come all over me—I get scared, begin to shake, chilly sensation up and down my spine. Heavy feeling in back of head on rising" (1)	7	.36
"Confused," and difficulty in speaking (2); "Lazy and shiftless—must keep nerved up" (1); Crying spells (2); Epileptic seizures (2); "Exhausted" ("all-gone feeling," "Not any life much," etc.) (14); "Lost nerve" or "scared" ("afraid of self," etc.) (3); Day-dreams (1); "Very apprehensive" (2); Inability to concentrate (2)	29	1.48
Impaired memory ("forgetful," "can't remember what I read," etc.)	12	.61
General numbness (2); Numbness of extremities (3); Numbness of left side of body (1); Numbness of left arm (1); Numbness of right arm (1); Numbness of right arm and hand (1); Numbness of tips of fingers (2); Paresthesias (5); Limbs go to sleep easily (3)	19	.97
Fine and coarse tremor (hands and tongue) (1); Trouble sleeping. Reviews day's happenings (1); Broken sleep (13); Much loss of sleep (9); Insomnia ("wakefulness," etc.) (7); Talks in sleep (1); Bad dreams and nightmares (3); Sleepiness (5)	40	2.04
Headache	76	3.88
Dizziness (27); "Twisting around"—not a dizziness (1); Pressure or peculiar feeling in head (2)	30	1.53
Fatigable ("tired all my life," "weary," "tired most of the time," etc.)	79	4.03
"Life often isn't worth while. Miserable. Can't do what one should do. All in—everything an exertion" (1); "Neither sick nor well—certainly not well" (2); "Everything wrong" (1); "Drags around much of the time" (1); "Sick" (2); "Completely dragged out. No life nor energy" (1)	8	.41
"Whole thing is wrong—feels like a chemical change" (1); "Feels terrible"—"Not sick" (1); "Don't like to work" (1)	3	.15
"Neuritis" (14); "Neuralgia" (7); "Sciatica" (7)	28	1.43
"Aches and pains all over—come and go" (3); "Pain all over" (1); "Sensory disturbance" (1); "Sensations of bees stinging all over body (1); Tingling sensation in lower legs, knees, and lower lumber spine (1); Burning and stinging constantly in hands, feet, and legs (1); Both legs tingle and hurt up through calves and knees (1); "Nerves sore" (1); "Sensation of nerves being laid bare" (1); Muscular soreness or flesh soreness (2); "Cold pain" at insertion of muscles (1)	14	.71
Weak ("flabby," etc.)	38	1.94
"Muscle-twitching"	3	.15
Total complaints referable to the neuromuscular system	500	25.49

* * *

	Number of Complaints	Percentage of 1961 Complaints
3. COMPLAINTS REFERABLE TO BONES AND JOINTS:		
Joint or "bone" pain (aching, etc.)	85	4.34
Arthritis (47); "Rheumatism" (16)	63	3.21
Stiffness (17); Swelling of joint or joints (36)	53	2.70
Joints "creak," "snap," etc. (10); joints are "tired" or "weak" (4)	14	.71
Backache	48	2.45

Back "weak"—fell from ladder on it six years ago (1); "Weak arches" (1); Heels sore on standing (1); Congestion in back of head with stiffness in head, neck and spine (1); Burning pains right heel, both knees, and back (1)	5	.26
Total complaints referable to bones and joints	268	13.67

* * *

4. Complaints Referable to the Respiratory System:

Antrum disease or sinus trouble (3); Hay fever, asthma, nasal catarrh, or nasal discharge (16); Nasal septum sore during twenty years (1)	20	1.02
Laryngitis or sore throat, chronic tonsillitis or pharyngitis, "throat affection," "dropping" into throat from nasopharynx	13	.66
Pain or difficulty in chest (24); Exposed to tuberculosis in roommate five months (1)	25	1.27
Cough (12); "Many colds," acute cold, "flu" or "grippe" (33)	45	2.30
Blood from mouth (1)	1	.05
Total complaints referable to the respiratory tract	104	5.30

* * *

5. Miscellaneous Complaints:

Seeking Physical Examination—		
Requests physical examination (Mission Board, Health Certificate, School Certificate, etc. (5); Thinks he is normal (1); Feels well (2); Requests typhoid vaccination (1)	9	.46
Accidents—		
Fell down steps (1); Fell ten feet from stack of boxes and hurt left little finger (1); Sprained left acromioclavicular joint (1); Abrasion left leg six days ago on shipboard (1); Recent cut finger (1); Fall from horse about eighteen days ago (1); Eight weeks ago strained right arm (pronators and head of radius) (1); Infected finger (1); Felon on left thumb (1); Biting cheek (1); Lack of extension left arm (1)	11	.56
Unclassified—		
Sudden pain with swelling right groin (1). "Pressure" when sitting (1). Thin (3); Pale (2); Loss of weight (25). Getting overweight (1). "Afraid of heart" (1). Swelling of feet and legs (2). Lues (?) (1). Ache in perineum (1). Very serum-sensitive (1). "Eosinophilia" (1); Severe bleeding after extraction of two teeth two years ago (1). Temperature unstable (1); (Low) fever or chills and fever (19); "Anemia" (8)	70	3.57
Total complaints grouped under miscellany	90	4.59

* * *

6. Complaints Referable to the Genito-urinary Tract:

"Leukorrhea" (6); "Bloody discharge from vagina when constipated" (1); "Foul-smelling discharge" from the vagina (1)	8	.41
Occasional pain in penis. No discharge (1); Venereal exposure (3); "Morning drop" (2); Sexual powers diminished ("Sexually dead," etc.) (3)	9	.46
Difficulty with menses (4); In menopause (3); Metrorrhagia and menorrhagia (2)	9	.46
Pregnancy	5	.25
	31	1.58
Bed-wetting (1); Hard to tell when to urinate (3); Priapism (1); "Dribbling" on urination (1)	6	.31
Pain in bladder and/or on urinating (7); "Bladder trouble" or frequency of urination (14)	21	1.07
Blood in urine (4); "Specific gravity reported too high" (1); Sugar in urine (1); Albumin and casts in urine (1)	7	.36
"Kidney trouble" or "floating kidney" (3)	3	.15
Urethral tumor (1)	1	.05
Total complaints referable to the genito-urinary tract	69	3.52

* * *

7. Complaints Referable to Heart and Blood Vessels:

"Bad heart" or "heart disease" ("valve leakage," etc.) (5) Irregular pulse with tachycardia (1) "Heart-beat misses" (3); Palpitations (4); Rapid pulse (8); Slow pulse (1) Poor circulation (4); Cold hands and feet (2)	28	1.43
Short of breath (on exertion) (7)	7	.36
Blood pressure, both high and low (2); Blood pressure high (9); Blood pressure low (4)	15	.76
Varicose veins	1	.05
Total complaints referable to heart and blood vessels	51	2.60

* * *

8. Complaints Referable to Skin and Mucocutaneous Areas:

Eruptions—		
"Red nose" or "acne rosacea" (2); Eruption of face (milia) (1) Poison oak (1); "Shingles" or herpes zoster (1); "Hives" (1); Skin irritation about thighs (1)	7	.36
Acne (5); Skin eruption (4); Skin lesion (1); Urticaria with "dopey" feeling, and dizziness and loosening of teeth (1); Eczema (6)	17	.87
Stigmata of skin of hands (1); Psoriasis (1); Petechial hemorrhages (1); Purpuric areas on both shins (1); Red spots on legs (1)	5	.25
Itching of anus or "pruritus ani" (5); Pruritus of anus and vagina (1); "Itchy anus" (1)	7	.36
Furuncle (1); Sores on scalp (1)	2	.10
Perspiration—		
Cold sweats (1); Night sweats (3); Perspires on back (1); Extremities perspire easily (1); "Breaks out in perspiration frequently during the day" (1); Body odors (1)	8	.41
Unclassified—		
Skin dry and peels (1) Hair falling (1) "Corns" (1)	3	.15
Total complaints referable to skin and mucocutaneous areas	49	2.50

* * *

9. Complaints Referable to Eyes and Ears:

Eyes—		
"Puffy under eyes" (2); "Dark circles under eyes" (1); Jaundiced sclerae (1) Eyes ache or "bother" (are "freaky," etc.) (10); Spots before eyes (2); "Eyes blurred" (1); "Nearsighted" (1); Defective vision (1) Swollen left eye (1); Cataracts (1); Styes (1); Inflamed eye (1); Granulated eyelids (1); About a week ago suddenly noticed that the vision in the right eye became very blurred. No pain, but some photophobia (1)	25	1.28
Ears—		
Deafness (5); Buzzing in ear (1); "Stuffy" ear (1); Swelling, back of right ear (1) Occasional earache (1); Pain, back of right ear (1) Discharge from left external meatus (1); Blood from right ear (1); Otitis media (1)	13	.66
Total complaints referable to eyes and ears	38	1.94

* * *

10. Complaints Referable to the Glandular System:

Thyroid enlargement or "goiter" (3); Glands (of neck) swollen, or enlarged (5); Hodgkin's Disease (5)	13	.66

Breast complaints (pain, lumps, swelling)	8	.41
Soreness in testes	1	.05
Total complaints referable to the glandular system	22	1.12
Total presenting complaints	1,961	100.00

EXPLANATION OF TABLES

Table 1 gives an analysis of the second clinical category, entitled "Patient's Own Estimate of Present Status," which is set up in contradistinction to the foregoing enumeration of symptoms representing the patient's voluntary statement of complaints. The table is composed of a summary of replies to direct questioning by the physician regarding the patient's habits, as listed in column No. 1 of the table.

The total number of amebiasis case histories in which the "patient's estimate of present status" is recorded on presentation, is 434.

In this group there were nine cases of luetic infection (2.07 per cent); twenty-two other individuals had a history of having had tuberculosis (5.07 per cent).

Table 2.—*Patient's Own Estimate of Present Status*

MISCELLANEOUS HABITS

Use of Tea		*Use of Coffee*	
None	68	None	46
Occasionally	57	Occasionally	26
Regularly	26	Regularly	89
Total	151	Total	161

Use of Tobacco		*Use of Alcohol*	
None	82	None	70
Occasionally	12	Occasionally	41
Regularly	49	Total	111
Total	143		

Use of Drugs	
None	49
Cathartics	9
Gland preparations	6
For sleep or pain	8
Miscellaneous	18
Total	90

COMMENT

It is the conviction of the author that only by the kind of simplification attempted in this paper can the problem of temperate zone and subtropical chronic amebiasis be impressed upon the general practitioner. There is a minimum of difficulty in diagnosing amebiasis in its acute and obvious form. There is far more difficulty in recognizing it where the complaints seem trivial, and the evidences of disease are obscure.

IN CONCLUSION

In conclusion, it seems to us that these analyses primarily emphasize that in chronic human amebiasis, in the temperate zone, the disease must be studied in its possible effects in tissues far removed from the large bowel. They also indicate plainly that, from symptoms alone, there is inadequate opportunity to evaluate closely the importance of amebiasis in chronic human disease. The wide range of symptoms in this group should stimulate us to prolonged and searching study of the interaction of *Entameba histolytica* with all tissues and organs.

Bank of America Building.

CARCINOMA OF THE BREAST—ITS ROENTGEN TREATMENT*

WITH SPECIAL REFERENCE TO THE INOPERABLE CASE

By J. M. Rehfisch, M. D.

AND

L. H. Garland, M. B.
San Francisco

Discussion *by Leo Eloesser, M. D., San Francisco; Orville N. Meland, M. D., Los Angeles; Alson R. Kilgore, M. D., San Francisco.*

STATISTICAL and quantitative reports have been something of a fetish in medical literature for some time, but there still appear to be a few fields of investigation which fail to yield satisfactorily, in ordinary clinical practice, to the statistical method, and carcinoma of the breast is one of these. This is largely due, of course, to the marked variation in the pathological structure of breast tumors, to the widely varying biological reactions of the host, and, last but not least, to the difficulty of complete follow-up in this country.

In a broad sense each case of breast malignancy is an individual problem, with but superficial relationship to any other case. Therefore one cannot group together all types in considering the application or the results of treatment. Malignancy in a pregnant woman under thirty is a very different disease from malignancy in a woman over seventy. How can we make brief statistics out of the response to treatment of these two types of cases?

For purposes of this paper we have abandoned any attempt at statistical evaluation and wish to present merely our clinical impressions as to the results obtainable with radiation, chiefly external high voltage radiation. Our experience in the treatment of these tumors goes back thirteen years. During that time some fundamental principles of technique were evolved and have since been adhered to (in the treatment of about four hundred cases).

GENERAL PRINCIPLES

The technique is based on the following general principles—principles largely biological and not readily susceptible to scientific proof. We believe that cancer stimulates in most people a definite resistance reaction which, in some cases, is almost sufficient to control the growth of the tumor. This resistance is well seen in some types of scirrhus breast cancer, and some types of basal cell skin cancer. We feel that radiation in adequate dosage is an aid to this resistance, but that there exists a very real danger of damaging it by too rapid intensive dosage, especially when this is given postoperatively. It is known, of course, that protracted massive radiation will control inoperable tumors in certain cases (using either external radiation, interstitial radiation or both), but this massive type of radiation can only be used in relatively localized tumors. The problem, in the average case of carcinoma of the breast, is not therefore one of killing all the cancer cells, throughout the wide zone of involvement, but rather of arresting their growth and extension and, perhaps, causing their enclosure in fibrous tissue; the cells are thereby rendered inactive for a variable period.

---

* Read before the Radiology Section of the California Medical Association at the sixty-second annual session, Del Monte, April 24-27, 1933.

Cancer of the breast in the majority of cases is not a local disease; the perimammary lymphatics are usually invaded and the axillary, supraclavicular and other lymph nodes often involved. Hence the problem of how wide an area one should include in the field of radiation is an ever present one.

In designing our method of attack, we are strongly influenced by Sampson-Handley's pathological work. As you are well aware, he has shown that lymphatic permeation develops early and is widespread in many cases; hence a wide field must be radiated to include the entire zone of probable permeation. To achieve homogeneous beam intensity over a field so wide, it is necessary to radiate at a long target skin distance. Our usual distance is, therefore, at least 70 centimeters, and our usual radiation field an area 35 centimeters in diameter.

EFFECTS OF RADIATION

The therapeutic result of radiation is believed to be due to both a direct and an indirect effect. There is a direct destructive effect on some of the cells of both the tumor and its stroma. Some cells in both are killed; some are merely damaged. Direct injury to the blood vessels plays the chief indirect part by interfering with the nutrition of those cells already damaged, but not killed. It is well known that cells undergoing mitosis are more susceptible to damage by radiation than resting cells; Ludford,[1] however, finds no specific radiation effect on cancer cells as such. He believes that the primary effects are the same on all cells, but that the capacity for recovery is less and the late changes more marked in tumor cells; it is obvious, however, that such cells are more vulnerable than normal cells.

Many years ago Ewing observed that examination of mammary cancers thoroughly treated with x-rays reveals a series of striking changes, although in the residual fibrous tissue some tumor cells may survive. Lee[3] summarizes the changes as necrosis, with nuclear hyperchromatism, hydropic degeneration of the cellular cytoplasm and granular degeneration of the connective tissue stroma surrounding the carcinoma cells. Ultimately the tumor cells may disappear and a granular detritus remain. Frequently well marked endarteritis is seen in the radiated area, and eventually fully radiated tumors are reduced to dense fibrous cicatricial tissue. One of us has observed all of these changes under the microscope.

INTERVAL BETWEEN RADIATION AND OPERATION

The above pathological changes take some time to develop, the exact duration depending on several factors, such as the rate of delivery of the radiation, the total dose applied, the rate of growth of the tumor and the general resistance of the patient. One of the problems in breast treatment today is the decision (in those cases which have received a course of preoperative radiation) as to how soon operation should be performed. Some believe that operation should be done soon after the radiation is finished, (1) to avoid the stage of hyperemia which occurs after treatment, (2) to avoid the possibility of further growth should the tumor be utterly radioresistant, and (3) to avoid indecision on the part of the patient as regards the need for operation should the tumor recede much. Some believe that operation should be done about six weeks after the radiation is finished, since (1) during that interval such beneficial changes as will occur usually take place, and (2) the tumor may shrink considerably and render amputation in bulky tumor cases much more simple. For figures from several well-known clinics see Table 2.

Some physicians, such as Forssell, repeat the preoperative course in cases that show good recession of tumor or axillary nodes, and again wait six weeks. The preoperative course may even be repeated three or four times before operation is performed. In this connection it is of interest to note a paper by Jüngling[2] in which he, a surgeon, summarizes his observation in fifty-two cases in an attempt to answer the following questions: (1) Can carcinoma of the breast be radiated successfully? (2) Does preoperative radiation render the following operation more difficult? (3) How do the wounds heal in the radiated areas if radical operation is done by the knife or by endothermy? He operated from three to six weeks after a short, six day preoperative course, which consisted of one E. D. (600 r) to the involved side, front and back. He noted no cases where the tumor increased in size following radiation. He believed that in nine per cent of the cases tissue induration made the operation more difficult, but that in the rest no significant difficulty was added. The wounds healed readily (except in a few endothermy cases where the apparatus functioned poorly), and transplantations, when needed, took well, although from the surrounding radiated tissue.

In the majority of the cases in our series, chiefly for technical surgical reasons, operation followed immediately or very soon after the course of preoperative radiation was finished.

RADIATION IN OPERABLE CASES

We believe strongly in the value of preoperative radiation. This is partly on account of our own clinical experience, and partly for the following two well known reasons: (1) It has been shown (Murphy et al.) that cancer tissue grafted under the skin in a region previously given an erythema dose of radiation, fails to take in a high percentage of cases, although a fragment from the same tumor, grafted in a non-radiated area on the same animal, takes in a high number of instances. Preoperative radiation, therefore, diminishes the potential risk from implanting tumor cells in the wound at biopsy or operation. (2) It has also been shown that preoperative radiation frequently destroys or at least reduces the vitality of outlying cancer tissue in lymphatic vessels or nodes. Forssell and Westermark have shown that doubtfully operable lesions may thereby be made operable.

Preoperative Course.—Our preoperative course is given as follows: one suberythema dose (600 r) anteriorly to the entire hemithorax on the involved side, and one-half that dose posteriorly to the axillary-supraclavicular area; this course is usually given in four days—200 r daily anteriorly for three days, using a 35 centimeter diameter field and a 70 centimeter target skin distance, and 300 r posteriorly on the fourth day, using a 25 centimeter field and a 50 centimeter T. S. D. The other factors are 200 KVP (pulsating, mechanical rectifier), filter 0.5 millimeter Cu. plus 1.0 millimeter Al. (effective wave length 0.16 Å), 30 milliamperes.

The output, at 50 centimeters target chamber distance, is 80 r per minute in air (without backscatter, using a small field).* This dose, being spread over four days, is usually not associated with any serious roentgen sickness. This is important, especially if the patient is to be operated on soon after the radiation is completed. Sodium amytal (gr. 3), given immediately after each treatment helps to allay nausea in sensitive patients.

Postoperative Course.—We believe that postoperative radiation is valuable, though less so than preoperative. Ewing states that postoperative radiation in judicious doses can destroy or render inert outlying foci and operatively implanted cells. It therefore destroys at an early stage, or diminishes the tendency for, local recurrences, and prevents or delays the spread of disease.

Since we believe that we had some very unfortunate results with massive postoperative radiation in our early work (inspired by the enthusiastic reports from the Erlangen massive technique school), we believe that this radiation should be given in moderation and slowly. Hence our postoperative course consists of six doses of 150 to 200 r delivered once weekly for six weeks, to the entire hemithorax, anteriorly (at 70 centimeters T. S. D., with a 35 centimeter diameter field).

We believe that these relatively small doses, spread over a long interval of time, are more likely to aid the biological defense mechanism than more rapidly given intense doses. If everything goes well we repeat the course in three months, again in six months and again in one year.

We have been really surprised by the number of patients who have for long periods escaped recurrence, even with extensive lesions, under this regime. It is superfluous to say that the associated surgical work has been as careful and thorough as is possible. But there were, nevertheless, many women in whom one could hardly hope for cure by operation alone, and yet in whom clinical cures of many years standing were obtained. For statistics from world literature see Table 1.

Table 1.—*Ca. Mammae—Five-Year Clinical Cures All Groups*

Author and Date	Treatment: Surgery alone	Treatment: Radiation with Surgery
Lee 1928	15%	39%
Forssell 1930	21%	40%
Hintze (collected) 1931	28%	38%
Pfahler 1932	29%	40%
Adair 1932	10%	40%
Authors (collected) 1932 These include Deaver, Greenough figures, etc.	29%	40%

Note.—Lee and Adair separately publish five-year cures in cases treated by radiation alone (external plus interstitial radiation): 36 per cent.

RADIATION IN INOPERABLE CASES

What constitutes an inoperable case? The answer to this question depends on the size and extent of the primary tumor and its associated adenopathy, the presence or absence of fixation, and the age and resistance of the patient. Assuming that by "inoperable" one means "probably incurable by radical surgery," it has been estimated (and statistics seem to prove) that the majority of patients seeking medical advice for breast cancer are inoperable. Hence the inoperable case constitutes a large problem in the care of cancer of the breast.

How should it be treated? Forssell's statistics show that some inoperable cases may be made operable by adequate radiation. We personally know that some cases can be clinically arrested for five years or more by radiation alone. We believe that practically all cases can be very definitely palliated and the lives of many prolonged in comfort by such radiation.†

Can this be done by external high voltage roentgen radiation alone? We believe the answer is, yes in the majority of cases, provided the principles

Table 2.—*Length of Preoperative Roentgen Therapy Course and Interval Between Course and Operation.*

Author and Clinic	Duration of Course	Interval before Operation
Berven, Radiumhemmet	7 days	21 days
Forssell, Sophiahemmet	7 days	42 days
Wintz, Erlangen	7 days	7-14 days
Lynham, London	7 days	10-28 days
Levitt, Bart's Hospital	14 days	42 days
Lee & Pack, Memorial	21 days	42 days

---

* Since backscatter to the skin with these factors, at 70 cm. TSD, is approximately 50 per cent, our 600 r air dose equals 900 r measured on the skin. The depth dose at 10 cm. in water with these factors is a little over 50 per cent.

† Treatment, without biopsy control, may lead to incorrect conclusions in a few individual cases, but in a large enough series of cases such error becomes clinically, though not scientifically, insignificant. Ewing says: "The majority of mammary carcinomata are rather easily recognizable by inspection and palpation, and microscopic examination, especially by frozen section, may usually be dispensed with or reserved for later study. A single, hard nodule in an otherwise unaltered breast is nearly always carcinoma."

above outlined are adhered to. When we discuss and deprecate the poor results of radiation, we should ask ourselves, Are we not discussing the poor results of poor radiation? that is, incomplete radiation? When we discuss the end results of a certain operation or a certain operative technique we usually first ask "Who did the operation?" before we draw any conclusions. Similarly, before condemning radiation in a certain case as having been useless, we might ask who gave the radiation and how thoroughly?

When patients have extensive fixation of the primary tumor, or supraclavicular metastasis, or very extensive axillary metastasis, or distant involvement, we believe they are inoperable.

In general these cases are treated as follows:

1. *Primary Inoperable Cases, Without Distant Metastases.*—These patients are usually given one suberythema dose (600 r) to the entire involved hemithorax, anteriorly and posteriorly, at 70 or 80 centimeters T. S. D., using a 35 centimeter diameter skin area. This course is given in about one week; it is repeated in six weeks, again in six to eight weeks, and, in favorable cases, again in three months (a total of four courses in approximately seven months).

An alternative method might consist of giving four such doses (2,400 r) in four weeks at one period; the total dose would be 2,400 r anteriorly and 2,400 r posteriorly, but considering the large area treated and the proximity of the liver the patient's tolerance would be fully taxed.

2. *Primary Inoperable Case, With Distant Metastases.*—It is in patients with this type of lesion that the radiologist finds, paradoxically, some of his most gratifying results. To be called to see a woman with a pathological fracture of the hip, in crippling pain, and to be able to relieve her pain in a few days and to produce or aid early union of her fracture is surely a satisfactory type of medical care. To keep such a patient in normal health by occasional courses of radiation for a number of years is certainly worth while. Some of the most dramatic illustrations of the powers of the x-ray to arrest tumor growth and cause regeneration of bone are seen in patients hitherto given up as hopeless on account of crushed vertebrae or other skeletal metastases.

Our general plan is to treat the lesion causing the patient the greatest amount of disability or distress—frequently a spinal metastasis—and then attempt to palliate the primary lesion.

The involved area of bone, being usually deep seated, is treated at a long target skin distance, using a wide skin field. The patient is given 200 r daily, or every second day until 600 r (in air) has been given (front and back), with the factors previously mentioned.

Supportive plaster jackets, frames or splints have to be occasionally used during the stage of postradiation repair.

The primary lesion, especially if distressing on account of odor or discharge, is treated at the same time, or shortly afterwards, by a technique similar to that outlined under (1). We would like to make a special point of the fact that patients with even bulky fungating tumors frequently do better with radiation alone than when treated by mastectomy and then sent for radiation. We also would suggest that patients with clinically suspected, but not radiographically proven bone metastases should always be treated—since most of these patients, if not treated, eventually prove to have such, and valuable time may have been lost.

3. *Recurrent Inoperable Cases.*—These cases vary so much in type and in general resistance that it is impossible to suggest in this brief outline any comprehensive scheme of treatment. Small, definitely local recurrences may do well under the plan outlined under (1). Some cases are, of course, unresponsive, and may even need neurosurgical measures for relief of pain (for example, cases of brachial plexus involvement).

COMMENT

Such is a brief summary of our present practice in the roentgen treatment of mammary cancer. It embodies no novelties, and we can only furnish the much decried "clinical impression" for the faith is in us. Another ten years will very likely cause us to make outstanding changes in our methods, but at present, with the radiological facilities ordinarily available, we feel that as satisfactory results can be obtained by the technique above outlined as by other roentgen technique.*

What are the disadvantages of radiation? We have outlined above the answers to the disadvantages attributed to preoperative radiation. Does radiation in inoperable cases cause damage to the lungs? Our only answer to this is that we have not experienced it in our series. One case of suspected postroentgen fibrosis cleared up very considerably (spontaneously)—we suspect it may have really been a case of atelectasis from hilar gland pressure; this patient has not yet come to autopsy. Does radiation damage the skin? Yes, there is sometimes a late telangiectasis, partial atrophy or induration; two patients whose tumors were clinically "cured" for five years with roentgen treatment alone developed extensive telangiectases over the breast, etc. But they are clinically well, have no pain, have small fibrous masses in their breasts, and are more than content with their lot. No cases of "x-ray burns" (postroentgen ulceration) have been produced. Does radiation make some cases permanently anemic? No; we have seen no such cases.

CONCLUSIONS

Operable cases of cancer of the breast should, in our opinion, receive adequate preoperative roentgen radiation. Operable tumors in elderly women may well be treated solely by radiation, but the advisability of relying on this treatment alone is still questionable. Judicious postoperative radiation seems advisable as a routine procedure.

---

* Should the ovaries be radiated in cancer of the breast in women before the menopause? While certain investigations appear to point to the advisability of this procedure, we do not do so routinely. The average castration dose would be 500 r (air) to the pelvis, front and back, delivered in a few days. Should the pituitary gland be radiated in such patients? We do not believe that the clinical and experimental work published so far justifies the routine treatment of the pituitary as an aid to inhibition of tumor growth.

Doubtfully operable cases should probably be given the benefit of the doubt, and be operated upon after a thorough preoperative course. Postoperative radiation is of unquestionable value in these cases, and should be given, we believe, routinely.

Inoperable cases should be handled by radiation alone, either by carefully planned external high voltage radiation, or by a combination of such radiation, with well filtered and carefully distributed interstitial radium radiation.

450 Sutter Street.

REFERENCES

1. Ludford, J.: Tenth Report Imperial Cancer Research Fund, p. 203, 1932. (Reviewed in editorial, Brit. Jour. Rad., 5:801, 1932.

2. Jüngling, O.: Healing of Wounds in Tissue Radiated Preceding Operation, with Special Consideration of Breast Cancer, Strahlentherapie, 44:125-130, 1932.

3. Lee, B. J., Pack, G. T., Quimby, E. H., and Stewart, F. W.: Irradiation of Mammary Cancer, with Special Reference to Measured Tissue Dosage, Arch. Surg., 24:339-410, 1932.

4. Forssell, Gosta: Radiotherapy of Malignant Tumors in Sweden, Brit. J. Rad., 3:198, 1930.

5. Evans, W. A., and Leucutia, T.: Deep Roentgen-Ray Treatment of Mammary Cancer, Am. J. Roentg. and Rad. Ther., 24:673, 1930.

DISCUSSION

Leo Eloesser, M. D. (490 Post Street, San Francisco).—The thesis set forth by Doctors Rehfisch and Garland that roentgen treatment is of value in both operable and inoperable mammary cancer is so well established that it no longer needs discussion. Matters of detail, however, are still open to question; and as the authors avowedly record clinical impressions rather than statistical facts, perhaps I may be allowed to add my ideas to theirs. I am much indebted to them for their constant ready coöperation, for almost all of the mammary cancers that have come to me for treatment, both operable and inoperable, have had the benefit of their help. They have treated a number of patients with distant bony metastases, among them a woman who sustained a spontaneous fracture of a cancerous humerus; whose fracture healed as well as it would have in a normal bone, and who lived for some three years, attending to her daily affairs in comfort, until she died suddenly of a heart attack, which may have had no relation to her cancer. Of the value of x-ray for such patients there can be no doubt.

The question of what to do for patients who are to be operated upon is of greater interest. You will note I say "to be operated upon" and not "operable," for only time and the ultimate results can decide whether patients are really operable or not when they come to operation. The x-ray seems to have a definite effect in preventing both metastases and local recurrence. Local recurrence is less to be feared, for modern technique has reduced local recurrence greatly. Preoperative radiation, however, has given me such confidence that I think that very extensive removal of skin is no longer necessary. A three-limbed incision, radiating about the tumor as a center and excising a reasonable amount of skin, and as much as seemed suspicious of infiltration, has sufficed and made large defects to be covered with grafts unnecessary. Metastases to the axillary lymph nodes have also been greatly reduced, as well as recurrences of lymph nodules in cases in which cancerous axillary glands were removed at operation.

Patients with suspicious mammary growths, as well as those with definite cancers, have been sent for a series of preoperative radiation distributed over four or five days, as described by Doctors Rehfisch and Garland. During this period the patients were ambulatory; from one to five days after finishing the course, they were hospitalized and operated upon. The skin was incised with a knife, but after the skin was severed the rest of the operation was done with a Percy cautery, which seems safer and more effective than the radio knife. The results have been so astonishingly good that it would require much persuasion to make me deviate from this plan.

Early operation has seemed much preferable; one removes the great mass of cancer; the changes induced by the x-ray in the surrounding and distant tissues go on for several weeks after operation and tend, it seems, to render inactive the few remaining cancer cells which the tissues contain; the operation needs be less radical and less destructive. Fibrous shrinkage is not yet troublesome at operation, but goes on for several weeks afterward, so that one is still operating in soft tissues that may be easily and gently handled. It seems that, in theory at least, this plan is greatly to be preferred to one which delays operation until full fibrosis has become established, then reopens the indurated and scarry tissues which are still full of cancer, and closes them with no further help from the previously administered radiation, which in the three to six weeks of waiting for the delayed operation has spent its force.

I have done but one delayed operation on a breast cancer, and in that one I was so fearful of incising the scarry tissue that I had a course of x-ray repeated just before operation. Delayed operations done in the neck have been difficult: bleeding has been hard to control, the tissues difficult to handle, and recurrence has been prompt.

My knowledge of a combination of post- and preoperative radiation is meager. Preoperative treatment is the essential one. In cases in which mediastinal involvement seems likely, in young and plethoric women, postoperative treatment would seem indicated. However, whether pre- or postoperative, I fully agree with the authors that the dosage should not be so massive as to make the patient sick. If the women are badly nauseated, if they lose much weight and become anemic, they are likely to be more hurt than helped by the x-ray.

Patients with pleural effusions and patients with liver metastases have not been benefited by radiation. In others, radiation, as described above, has made of breast cancer a hopeful instead of a desperate disease.

*

Orville N. Meland, M. D. (1407 South Hope Street, Los Angeles).—This paper of Doctors Rehfisch and Garland is representative of the radiological viewpoint in the treatment of carcinoma of the breast. Therapeutic radiologists may differ in their technique and time spacing, but all are agreed that unless the patient is given irradiation in conjunction with her surgery, she is not receiving the benefit of all the approved weapons in stamping out the disease. Even surgeons who are not in favor of the use of preoperative treatment, or prophylactic postoperative treatment, agree as to the palliative benefits in local recurrences, and the painful metastatic lesions, as found in bone.

Every radiologist sees a number of patients with carcinoma of the breast who are in good condition, but have either an extensive local involvement or fixed involvement of the axillary nodes and, at times, supraclavicular involvement. These patients are plainly inoperable from the standpoint of complete eradication, for experience has shown that the disease may progress much more rapidly after incomplete removal than before. In patients falling into this group, we have been using interstitial radiation by means of platinum needles, the thickness of which is five-tenths millimeter. The amount of radium in each needle varies from one to two milligrams. The Keynes technique of insertion is used; namely, a complete barrage around the primary tumor, as well as needling in the axillary, supraclavicular, infraclavicular, and mediastinal fields. A little thought shows that in this method the effects of radiation are carried far beyond the field of the most radical breast surgery, as usually done. We have been doing this work over three years, and, although it is too early to say that it should be used in operable cases, it is a very superior method of treatment in the inoperable group. After the immediate radiation effects wear off, the breast slowly assumes a normal appearance and the nodes completely disappear. In some patients the primary tumor may shrink down to a small hard lump, composed of a mass of fibrous tissue in which remnants of carcinoma at times remain. This small tumor may then, if the patient demands, be removed by electrosurgery, with good palliative results.

⁂

Alson R. Kilgore, M. D. (490 Post Street, San Francisco).—That the treatment of carcinoma of the breast is a field of study to which the statistical method is inapplicable, is a statement which will be read with some surprise. Doctors Rehfisch and Garland have stated quite properly that breast cancer in a pregnant woman under thirty, and in a woman over seventy, are two different diseases, and that even in women of comparable age, breast cancers present remarkable variations in pathologic structure and in clinical course. It is this very fact of extremely variable course which makes it unsafe to draw conclusions regarding efficiency of treatment from clinical impressions about one case or a few cases. If Doctors Rehfisch and Garland intend to deprecate the cluttering of medical literature with statistical tables based upon series of twenty-five, fifty, or one hundred unclassified cases, I am in hearty agreement.

But four hundred cases of breast cancer is a substantial group, and conclusions from such a series should be significant, whether called "clinical impressions" or statistics.

With the conclusions that roentgen therapy offers relief and prolongation of life in inoperable cases, and especially preoperation therapy adds to the chances of successful surgical attack, no student of breast cancer will disagree. It is gratifying to see an intelligently planned, thorough technique adopted and adhered to.

Doctors Rehfisch and Garland have pointed out one of the important questions still unanswered. Is efficiency of preoperation therapy dependent upon the time within which the treatment is given, or upon the interval between treatment and operation? Should operation be done immediately following radiation, after three to six weeks, or even after maximum regression of tumor mass has been obtained by repeated courses of treatment?

I do not see how these questions can be answered except by adequate "five-year cure" statistics, carefully controlled. From the number of cases required in each of various treatment method groups, it appears that we shall still wait a long time for our answers.

⁂

Doctor Garland (Closing). — The problem of how long an interval to allow between the end of the preoperative course of roentgen therapy and the day of operation is, as Doctor Kilgore states, still a most unsettled one. The bulk of surgical and pathological experience would seem to indicate that with preoperative therapy, such as we have employed, marked fibrosis is not likely to develop so soon as four or six weeks after finishing the radiation. If it did, we would certainly hesitate to advise operation at that time.

We have seen marked fibrosis develop in a few cases, but each of these patients received three or four courses of roentgen therapy and the fibrosis did not develop for several months. As Doctor Eloesser indicates, his predilection for the short interval between the roentgen course and operation is based to some extent on the conditions found in one case, wherein a long interval developed unintentionally. While the fibrosis in this case may have been entirely due to the radiation, it is not impossible that it was due partly to other factors as well (such as the type of tumor, and the presence of several preceding attacks of mastitis). Therefore, with all due respect to Doctor Eloesser's mature judgment, I personally feel that this experience would require confirmation by other similar cases before one could thereby support a contention that a delay of four weeks is dangerous.

In regard to Doctor Meland's work with radium needles, it requires a very large amount of radium in very special needles plus considerable experience in the insertion and distribution of those needles. Therefore, it is not yet a technique which can be used outside of a few fortunate and well-equipped centers. As previously noted, our aim in this paper was to present a technique which could be used in many parts of the country.

THE LURE OF MEDICAL HISTORY*

FIFTY YEARS OF PROGRESS IN THE PREVENTION OF DISEASE†

By J. C. Geiger, M. D.
San Francisco

II‡

QUARANTINE

QUARANTINE, derived from the Italian word "quaranta," meaning forty, is a term of the old sanitary system applicable today in administrative control of a number of diseases. The value of quarantine depends upon many factors, some of which were not taken into consideration or were quite misunderstood when it came first into use. Even today it is subjected to interpretations more or less conjectural; for instance, the two-week quarantine of contacts of cases of infantile paralysis. Quarantine regulations, fully enforced, generally mean loss of time to individuals, loss of commerce to nations, and a decided disturbance of the relations between doctor and patient, health officer and politician, health officer and some active religious cult. Originally, quarantine meant the detention of ships and men, had certain relations to the loading and unloading of cargoes; and later it was aggravated by introducing fumigation. Plague was thought to have been imported into London by bales of merchandise from Holland, which came previously from the Levant. The disease disappeared from London about 1703, perhaps helped by the great fire of 1666; but the disappearance was attributed to the quarantine regulations. The modern epidemiologist, however, while he recognizes that modification, gradation, and even cessation of many epidemic diseases may occur, knows that others will continue unless systematically destroyed; he knows, for instance, that the continuity of the plague depends upon the survival of the infected rat or other rodent with its resident fleas.

---

* A Twenty-five Years Ago column, made up of excerpts from the official journal of the California Medical Association of twenty-five years ago, is printed in each issue of California and Western Medicine. The column is one of the regular features of the Miscellany Department of California and Western Medicine, and its page number will be found on the front cover index.

† One of a series of public lectures by invited speakers, conducted by the Stanford University School of Medicine.

† From the Department of Public Health, San Francisco.

‡ This paper is appearing in serial form. For Part I, see November California and Western Medicine, page 327.

The limitation of freedom of movement of persons or animals who have been exposed to disease is generally a period equal to the known or suspected incubation period. Susceptibility or immunization play their part, so that flat or fixed rules are difficult to make and difficult to enforce. For instance, measles quarantine has been placed on a patient for the duration of the appearance of the rash, and yet probably long afterward the patient is capable of transmitting the disease. On the other hand, recent successful vaccination against smallpox would eliminate further detention of contacts. Presumably, therefore, simple quarantine regulations may mean very little in the control of disease unless proper surveillance or isolation is practiced. The problem may become as manifold as are the regulations for different countries, states, counties, or cities. The value of the epidemiological section of the League of Nations and that of the United States Public Health Service in standardizing regulations for quarantine or for disseminating information of the presence, spread, or trends of disease, cannot be overestimated.

Quarantine regulations may be spoken of as local (city, county, or state), interstate, or maritime. Generally, local regulations must coincide with those of the state, although it has been conceded that these may be made more comprehensive but never less so. Interstate quarantine regulations are considered a function of the United States Public Health Service, and rarely now do controversies arise between states as to the control of disease within the borders of their neighbors. On the other hand, health officials exchange information and study the public health reports prepared by the federal authorities. The sorry spectacle of olden days, the quarantining, for instance, of Louisiana by Texas for yellow fever, has been eliminated.

The terms "isolation" and "quarantine" are frequently used by many health officials interchangeably. Technically speaking, quarantine means detention of the well for varying incubation periods; isolation means control of either patients or carriers.

The defense of countries, nations, or continents against disease is known as maritime quarantine. Plague-infected rats are by it reduced to a safe minimum in ports of commerce; the breeding grounds of yellow fever and malaria mosquitos are destroyed; safe water protects against typhoid and cholera; food supplies may be inspected, and medical and laboratory examinations of food handlers instituted to prevent amebic dysentery; clean environmental conditions against lice may eliminate typhus fever; and vaccination of the populace may prevent smallpox. If all of these measures could be carried out or supervised by an active, scientifically trained health department, maritime quarantine would be entirely unnecessary. Maritime quarantine is enforced by the United States against cholera, yellow fever, plague, typhus fever, smallpox, leprosy, and, more recently, epidemic cerebrospinal fever. The time of the detention is in accord with the known or accepted incubation period, and counted from the last exposure. Well-equipped quarantine stations are maintained at strategic ports. Communication of any kind with ships in process of quarantine in ports is forbidden until such ships are released by the responsible officer; the vessel itself may be disinfected; the crew and passengers detained until suitable laboratory examinations, when necessary, can be completed, and the actual source of the disease traced, particularly if contracted in a port or on shipboard. All vessels, domestic or foreign, touching United States ports from abroad are required to secure from consuls what is known as a "bill of health," submit a statement of health conditions aboard ship, and the number of passengers discharged and embarked at various ports. The boarding quarantine officer will examine the crew and passengers and, if there is no communicable disease aboard, the vessel is discharged with a so-called "pratique." In addition, whether ships are rat-proofed or not, if they come from plague-infected ports, fumigation is mandatory. This has, in the past, caused delay and seemingly unnecessary expense to shipping. It is fully recognized that quarantine measures do not supply absolute protection; the faster the transportation and the more likely the carrier state, the more doubtful the control. What is desirable is the enforcement of measures that do not overinterfere with commerce, but which convey a maximum of protection with a minimum of annoyance and expense. But even under the best conditions, maritime quarantine not infrequently partially fails.

The quarantine of local infestation can be pointed out only in a general way, for space forbids detailed discussion. Contagion lines may be determined and control measures used against them; but the healthy carrier offers additional problems, especially in typhoid, diphtheria, and the epidemic diseases of the central nervous system. Theoretically, isolation offers an ideal method for control, but many cases are either not reported or not recognized. Therefore, the practicability of isolation varies and usually is in inverse proportion to the reporting, the promptness of reporting, the number of carriers, the time of communicability, the susceptibility, the dosage and the virulence of the microbic or viric factor. Regulations markedly vary with the disease. Yellow fever or malaria may be isolated behind suitable screens; primary or unvaccinated contacts of smallpox controlled or isolated for the entire incubation period; typhoid bacilli carriers removed from dangerous occupation, such as cooks, and syphilitics with open lesions properly isolated, treated, and educated. On the other hand, the tuberculous or the leper who is careful can be allowed more or less freedom.

To quarantine or isolate properly and early is to neutralize the spread of disease. Communicable disease hospitals, especially for diphtheria, smallpox, and scarlet fever, have become effective. Many perplexing problems arise as to the wage-earner, and the school child, and as to regulations for each disease. Diphtheria, for instance, can be released on two negative nose and throat cultures taken at suitable periods. Notwithstanding its many limitations, quarantine procedure is the measure most used by the health official, and, as our knowledge of disease progresses, will become necessarily more effective.

EPIDEMIC INFLUENZA

In respiratory infections beyond seasonal expectancies or during great pandemics, "influenza" as a term becomes important from a clinical, pathological, and bacteriological standpoint, and infinitely significant from a public health standpoint. The disease occurs in serious and furious epidemics, and in great pandemics, as an acute, highly communicable, febrile disease. It has a high mortality rate. In the 1918 outbreak it is estimated that over two hundred million cases and ten million deaths occurred in a period of twelve months throughout the world. In the United States alone there occurred twenty million cases and 450,000 deaths.

Since the year 1175, there have been eighty influenza pandemics; Willis and Sydenham described the great outbreak of 1510. Such pandemics create public health situations that even today rapidly become chaotic as to control measures and investigative procedures. Rapidity of spread and rapidity of subsidence, and the undoubted occurrence of interepidemic types, make the investigative problem a complicated, necessarily hurried and expensive one. The relationship between pandemic and interepidemic influenza is obscure. The obscurity extends to the relationship of type causative strains of bacteria or viruses at both periods. There is no unanimity of opinion upon the origin of the virus, or the possible modification or attenuation.

Since 1918 the public health official has been concerned only with interepidemic influenza. Apparently this type of the disease may be considered a respiratory infection, diffusing through and involving whole communities, or occurring in sharply defined outbreaks in schools, colleges, and other institutions. Clinical identification of influenza is obviously difficult but not unattainable. Conversely, microbic or viric identification is at present impossible. It is, therefore, on certain epidemiologic characteristics that identification can be based with any degree of certainty. The epidemiologic features *en masse* may be briefly stated to be the close relation of the curve of influenza to that of pneumonia; its high morbidity, its rapid dissemination over wide areas, its generally characteristic racial and age incidence, and its dislocation of ordinary age distribution mortality of respiratory diseases with increase in young adults; its great explosiveness (the peak of the curve being reached in two or three weeks, or an incidence curve of not more than four to eight weeks), its high dispersiveness (many widely scattered cities reaching the peak of the curve about the same time, for no disease spreads so rapidly in so short a time); and its recurrences.

But the lack of progress in control measures, of knowledge as to methods of spread, and of information as to a microbic or viric factor need not deter discussion. In 1918, when influenza swept the world in a vast pandemic, 230,845 cases were reported in California. The years 1920, 1922, and 1928 could be considered interepidemic years for California, for there were reported approximately an equal number for each year, with a total of 160,000 cases for these periods. Compare this with such non-epidemic years as 1921, 1924, and 1930, when approximately 1,800 cases were reported on an average and over 5,400 cases for these periods. Naturally, predictions of the future of influenza in California, or the world, are fraught with statistical difficulties; but the health official should carefully watch the records in order to give warning of any trend to epidemic proportions.

Definite conclusions appear to be unwarranted. A wave of respiratory diseases, many cases of which have been diagnosed as influenza, has recently swept over parts of the eastern section of the United States. New York City reported sixty-eight cases for the week ending January 3, 1931, and 1,140 for the week ending January 24. New Jersey, Maryland, North Carolina, and South Carolina reported similar increases. California reported only 159 cases for the first two weeks in January. During the week ending January 31, 1931, approximately 13,000 cases of influenza were reported, two-thirds of which were in the South Atlantic States, and 60 per cent in Maryland, North Carolina and South Carolina. In Europe, Poland reported increased prevalence in November, 1930; Germany and France in December, 1930; Jugo-Slavia, Denmark, Switzerland, and Spain in December. The disease was evidently mild, and clinical benignity the rule. England and Wales reported from 107 towns in December that the general mortality was 12.8 per 1,000, which increased to 17.2 per 1,000 in the week ending January 17, 1931.

Having so lightly disposed of 1930 and 1931, let us consider 1928 and 1929. Any doubt as to the reality of an epidemic of influenza can be dispelled by a survey of the mortality statistics. Up to January 5, 1929, twenty-six thousand deaths occurred in the United States which were attributed to this epidemic, and this is a conservative estimate. Mortality was definitely on the decline in January, 1929, especially in the Pacific and Mountain States. This epidemic, as well as that of 1926, apparently started on the Pacific Coast.

The origin of epidemics of influenza is shrouded in obscurity, if, indeed, a single starting point exists. One need only recall the history of the 1918 outbreak to bring to mind that there was reported present in the army camps of Great Britain and Continental Europe in 1916-1917 a purulent type of bronchitis with the so-called heliotrophic hue or cyanosis. The disease was then not regarded as contagious, but it was perhaps the precursor of the great pandemic of our time. In fact, in the spring and summer of 1918 western Europe had a disease which was probably the immediate forerunner of the pandemic, and is now called the first epidemic wave. The observations at the autopsy of LeCount in Chicago in April, 1918, and the explosive type of outbreak at Camp Funston and Camp Oglethorpe in March, and particularly the reports of Kerr and his associates at Camp Lewis in April (see Kerr's report), indicated the probable presence of epidemic influenza in both the United States and Europe in early spring, at least in April.

It appears, therefore, that in wide areas of the world, in 1918, outbreaks were occurring, yet original foci or transference from one country to another, or one continent to another, cannot be traced with any degree of plausibility. Two epidemiologic facts stand out prominently: that the first wave was relatively trivial; and that the second wave was more explosive, more dangerous, more dispersive, more incapacitative, and more depressive of mind, reaching the crest of the wave in October and November. Epidemics which show all such features, especially the world-wide prevalence, are somewhat rare. Minor epidemics or recurrences at frequent intervals have practically the same epidemiologic characteristics, but present less severe clinical types and, therefore, less effect on the general mortality. It would appear that since 1918 distinct outbreaks have occurred, particularly in 1920, 1923, 1926, and 1929, with certain other minor affairs, that are true epidemic influenza of modified virulence and intensity. The increased mortality from respiratory disease for these periods, in triplet waves, with statistical mortality superiority for 1920 and 1929, may be sufficient ground for assuming that a maximum respiratory death rate may appear in 1932.

The tendency of epidemic diseases is to fluctuate, usually maintaining a fixed seasonal basis. Epidemic influenza, however, has spread at irregular intervals over wide areas, affecting large proportions of the population and presumably disregarding climatic and seasonal conditions. The accumulation of population susceptibles is a doubtful factor since, ordinarily, individual immunity is considerably transient.

Of all epidemic diseases, influenza is unique for its rapidity of incidence; extraordinary extent over land and sea; its occurrence in opposite seasons, no matter what the weather; its effect on all classes of people; its varying clinical intensity; its apparent extension to animals, for instance, swine; and its recurrence at irregular intervals. There should be unremitting collection and collation of data, especially clinical, of every visitation of the disease, in order to deduce the mode of propagation, the exciting factor, and the measures to be adopted for control. To scientific medicine and public health, this disease offers a most intriguing mystery to be solved.

(To be continued)

CLINICAL NOTES AND CASE REPORTS

SPLENIC EXTRACT—ITS EFFECT ON THE CALCIUM OF BLOOD SERUM [*]

By John Ferguson, A. M.
Edmonton, Canada

A PROTEIN-FREE extract was prepared from the spleen of young cattle, care being taken to remove the gland from the carcass as soon as possible. This powder was dissolved in 0.9 per cent NaCl solution and injected subcutaneously. Calcium determinations of the blood serum were made before the injection, and twenty-four hours after it (Clark and Collip method).

In each case a drop in calcium was noted:

1. Dog: 11.5 to 10.5 milligrams per 100 cubic centimeters of serum.

2. Rabbit: 14.1 to 12.8 milligrams per 100 cubic centimeters of serum.

A control (rabbit) showed no significant change, being 13.2 milligrams before the injection, and 13 milligrams twenty-four hours later.

Edmonton, Canada.

SANTONIN POISONING

By W. A. Vinks, M. D.
and
A. W. McArthur, M. D.
Lincoln

PRACTICALLY all standard texts on pharmacology emphasize that a drug as potent and dangerous as is santonin should be sold only on prescription; and yet a few inquiries at retail pharmacies show, without a doubt, that far more of the drug is sold to mothers who have received their advice from the next-door neighbor, and whose only guide to dosage is the legend on the box. And the manufacturer's directions are not only loose and inadequate, but sometimes definitely improper and dangerous. In this case, here is a drug which, according to Sollmann, Solis-Cohen and others, should not be given on an empty stomach, as this favors absorption, which is most undesirable; and yet the directions on a popular brand of "worm candy" (whose chief constituent is santonin) state: "To obtain best results from the use of this preparation, fast for twelve hours before commencing its use and while taking it. In the case of children, where fasting is difficult, only milk or some other light diet should be given." Furthermore, a given dose of the drug cannot be taken with safety by all children of the same age, as the regular U. S. P. dose has produced serious poisoning in a weak and emaciated child and two such doses have been fatal. In other cases, three and four times the dose has produced only minor symptoms.

---

[*] A preliminary communication.

[*] From the department of physiology and pharmacology, University of Alberta, Edmonton, Canada.

Without any reference to the therapeutic indications of santonin, the writers cite the following case to show the dangers of its improper use, even when much less than the customary dose is used.

REPORT OF CASES

Case 1. — A somewhat undernourished girl, seven years of age and weighing forty-five pounds, who has usually been in fair health except for a moderately severe attack of influenza five years before, and mild chronic tonsillitis at the time, was discovered to have pin-worms (*Oxyuris vermicularis*) and was given a preparation of santonin and podophyllin, called "worm candy" and sold to the general public by a well-known chain drug-store company. The mother thought this a safe medicine to use because, previously, she had given it to another child, on a physician's advice, and there had been no untoward results. On May 6, at bedtime, two "candies" (later ascertained to contain one-fourth grain santonin each) were taken by this girl on an empty stomach, and the next morning two more. (Total amount of santonin ingested was one grain, the printed directions having allowed 2¼ grains for one of her age.) No food was taken all this day, and a laxative at night produced a fair bowel movement. On the afternoon of May 7 the urine became dark-colored, and the child complained of seeing yellow. That night she became severely ill, had colicky pains in the abdomen, nausea and trembling, and the next day she vomited several times and was too weak to sit up. On examination, the following findings were noted: The patient was in a peculiar semistupor and complained somewhat of pains in the abdomen. There was a marked generalized jaundice, sweating, and a coldness of the skin. The pulse was slow, regular and soft, and the breathing slow. The blood pressure was 90/55. The throat was negative, except for chronic tonsillitis; the pupils reacted normally, heart tones were slow, regular and distant, and the lungs negative. The abdomen was tender to touch, particularly on the right side, the right rectus muscle being much more spastic than the left; the liver was enlarged to one inch below the costal margin in front, and the spleen and kidneys were not palpable. Urinalysis revealed: dark orange color, moderate turbidity, slight trace of albumin, no sugar, numerous blood cells, no casts, no pus cells, large amount of amorphous material, some uric acid crystals, reaction acid, Gmelin's test for bile negative, Huppert's test for bilirubin negative, while Schlesinger's test for urobilin showed a very slight fluorescence, and Hay's test for bile acids negative. The Van den Bergh test, made by Dr. Paul Christman of Sacramento, showed a biphasic reaction, and the indirect quantitative test revealed 0.8 milligram bilirubin per 100 cubic centimeters of blood. On supportive and eliminative treatment the patient recovered, most of the symptoms leaving in about four days, and the jaundice in seven; but tenderness to pressure over the liver and slight spasticity of the right rectus remained for about two weeks.

⁂

Case 2.—A slightly underweight boy, nine years of age, who had been fairly healthy except for tonsillitis occasionally and chicken-pox and whooping-cough some years before, was given the same preparation of santonin as in the above case. The mother thought that she had seen pin-worms around the child's anus and administered the treatment without consulting a physician. The child took two "candies" on the morning of May 8, had no food all day, took two more that night, and then two more the next morning, with no food till the afternoon of the second day. (Total amount of santonin ingested was 1½ grains; printed directions allowed 2½ grains for one of his age.) No cathartic nor enema was administered, but the bowels moved naturally on the night of May 8. That same night the child became ill, and next morning the mother noticed that his sclerae were yellow and that the urine was dark orange. Soon the entire skin became jaundiced and there was giddiness, trembling, cold sweat, vomiting, followed by stupor. Physical examination revealed a very sick child—toxic, in a stupor, and markedly jaundiced. The skin was cold and damp, there was a side-to-side rolling of the eyeballs, and a twitching of the hands and arms. The pulse was slow and soft, and the heart-tones feeble. Later the liver and spleen were both determined to be enlarged, but the kidneys were not palpable. Urinalysis: Dark brown color, moderate turbidity, no sugar, large number of blood cells, no casts, no pus cells, large number of crystals, large amount of amorphous material, tests for bile negative. The indirect Van den Bergh by Doctor Christman of Sacramento showed presence of 1.5 milligrams of bilirubin per 100 cubic centimeters of blood. Under supportive and eliminative treatment, the patient recovered. Most of the symptoms were gone within five days, and the jaundice left in seven days; but the soreness and enlargement of the liver remained three weeks. A urinalysis at the end of ten days showed presence of a few red blood cells, but no other significant findings.

COMMENT

1. Overdoses, and sometimes conservative doses, of santonin may produce serious poisoning, and should therefore be sold only on prescription.

2. Physical condition of the child, as well as age, should be taken into consideration in determining the dosage.

3. The drug should not be given on an empty stomach, as this would favor absorption. A rapidly acting cathartic should not be forgotten, as it would shorten the absorption time.

Fourth Street at D.

FETAL PERITONITIS*

By Alfred J. Scott, Jr., M. D.
Los Angeles

In a recent journal, Abt[1] discusses the causes for fetal peritonitis and reports illustrative cases. He reviews briefly the history of this subject from the time of Simpson in 1838.

ETIOLOGY

The etiologic factors causing fetal peritonitis may be: (1) Inflammatory processes, either bacterial or nonbacterial, possibly transmitted from the mother through the placenta. (2) Syphilis (?). (3) The escape of intestinal contents into the peritoneal cavity. Prior to the fifth month of gestation, the intestinal contents are sterile; but after the fifth month, probably infectious. Aseptic meconium results in a noninfectious peritonitis. The site of the lesion is usually at the lower part of the ileum, cecum or the sigmoid, and the size of the lesion may be from a pin-point to a large rent. (4) Urinary tract malformations may result in peritonitis. (5) Fetal appendicitis may be present. (6) Adhesions and bands may be due to developmental or embryonal rests, or secondary to inflammation. (7) The theory of embryonal hyperplasia of the alimentary tract endoderm. The persistence of these embryonal occlusions results in the congenital type of intestinal atresias and stenoses.

---

* From the California Babies' Hospital, pediatric department of the California Hospital.

* Read before the Los Angeles Clinical and Pathological Society, March 23, 1933.

SYMPTOMS

There may be death *in utero* with the pathology present or, if the child is born alive, an early death. There is abdominal distention, dilated superficial blood vessels, a certain amount of rigidity, tympany or dullness, dyspnea and varying degrees of cyanosis. Early vomiting of food, later fecal material. There is crying as an evidence of pain, a varying amount of edema of the lower extremities and icterus also. Aterminal rise of temperature occurs. The infant usually nurses well the first few days of life, but the bowels may or may not move. There may be other congenital defects.

REPORT OF CASE

On the service of Dr. Joseph Nicholson, a male was born spontaneously, November 15, 1931, after a 26-hour first-stage and 15-minute second-stage labor. The birth weight was 4 pounds 14 ounces. The infant was about one month premature.

The prenatal history was that of a normal pregnancy with no venereal history, and no known cause for the premature delivery.

The infant's length was 18½ inches, the head 12 inches in circumference, and the shoulders 12½ inches. No gross congenital deformities were noted.

In the placenta there were several infarcts, and evidence of an old hemorrhagic area centrally placed.

From November 15 to 19, inclusive, the baby was fed with breast and bottle, the weight, however, declining to 4 pounds 7½ ounces. On November 19 the weight rose to 4 pounds 10 ounces, which was held until the eighth day.

The stools, from November 16 to 20, were meconium, and the next two days were tinged yellow and green, with green and yellow curds.

On the evening of November 19, pitting edema was noted in the lower extremities and up the thighs, on to the abdomen as far as the umbilicus. The skin was reddened, and the abdominal vessels were prominent. The legs were cold, spastic and extended. Reflexes were present only in the feet. The abdomen was distended and tense, but the cord-stump seemed normal. The upper extremities were spastic, but not edematous. The fingers were fully extended. The heart was normal and the lungs clear. The infant was toxic but not restless, and did not cry easily.

The urinalysis showed faint trace of albumen, a few epithelial cells, leukocytes, and bacteria.

Blood Count.—Hemoglobin, 102 per cent; erythrocytes, 5,392,000; color index, 0.94; leukocytes, 6,100; polymorphonuclears, 64 per cent; and lymphocytes, 33 per cent.

A few myelocytes, and occasional red cell showing basophilic stippling, and occasional nucleated red cell and a slight degree of polychromatophilia. The platelets appeared normal.

The temperature the first four days of life was between 97 and 98 degrees; but on November 19 it was up to 98.6.

When we saw the infant we advised putting it in an incubator, to raise the body temperature, and give only breast milk every four hours, with water between feedings.

On November 20 the infant was considerably warmer and more active, although the legs were still very hard from the edema.

On November 21 there was less edema of the legs, but the scrotum was now markedly edematous. The abdomen was still distended, but not so tense. On November 22 there was slight blood tinge to the stool.

It was suggested to take a roentgenogram, to see if we could learn anything, as we did not consider the child a good surgical risk. The report was: A dilated esophagus, with the stomach of normal size. The heart was normal in size and shape. The diaphragm was of normal level and curvature. There was much free air or gas in the peritoneal cavity, suggesting a perforation of the intestinal tract distal to the duodenum.

The infant died at 3:45 p. m. on November 22, 1931.

Autopsy by Dr. A. H. Zeiler, performed November 22, 1931.—"Body was that of a premature male infant said to be eight days old. The stump of the dried cord was still attached. There were no scars. The abdomen was distended, and a mass could be palpated in the lower half. This mass was globular in shape and seemed to fill most of the lower half of the abdomen and pelvis. The abdomen was found to be the seat of a diffuse peritonitis, with loops of small intestine matted together in the pelvis and covered with yellow fecal material as well as fibrin and pus. The loops of intestine in the upper abdomen were deeply injected and covered with pus, but the fecal matter appeared to be mainly in the pelvic region. The mass that was felt through the abdomen was found to be the matted-together loops of small intestine.

"The umbilicus and round ligament of the liver, as well as the remains of a hypogastric artery, were dissected out, but evidence of infection could not be traced along these structures. The spleen, liver, gallbladder and kidneys, excepting for the peritonitis, were essentially negative.

"On separating the head of the cecum about one centimeter from the base of the appendix, a small pinhead opening was found on the lateral surface. There was an escape of putty-like fecal matter through this area. It was difficult to determine whether this opening occurred postmortem, due to separation of adhesions, or whether it was an antemortem perforation. The dissection was blunt and very gentle, and it seems probable that the opening was antemortem. This was somewhat corroborated by the presence of fecal matter in the pelvis before any dissection and by x-ray films.

"The large intestine was dissected out and found to be the seat of an ulcerative colitis, with the ulcers mainly in the sigmoid and descending colon.

"Thorax: The lungs were well aerated. There was a moderate amount of hypostatic congestion, but no consolidation. The heart and thymus were negative.

"Microscopic: Sections at different levels of the colon revealed an acute ulcerative colitis. Some of the ulcers were membranous in character. They extended down into and through the submucosa. There was a mild acute inflammation in the serous layer. There was no ulceration at the point of perforation, but on either side the mucosa was superficially ulcerated. There was nothing about the histological appearance of the perforation to prove or disprove whether it was ante- or postmortem.

"*Anatomical Diagnosis.*—(1) Prematurity; (2) acute diffuse peritonitis; (3) acute ulcerative colitis; (4) perforation at the head of the cecum."

SUMMARY AND CONCLUSION

1. A new-born infant is reported with an ulcerated colitis, which ruptured into the peritoneal cavity.

2. The etiologic factor in this case is in doubt, but probably some antenatal condition.

3. Surgery is very unsatisfactory in this condition, and the prognosis is uniformly fatal.

4. No bacteriologic study was made on account of the fecal contamination.†

1401 South Hope Street.

REFERENCE

1. Abt, Isaac: Fetal Peritonitis, Clinics of North America, Vol. 15, No. 3, pp. 611 et seq. (Nov.), 1931.

---

† Our thanks are due Dr. Joseph Nicholson for the privilege of seeing this infant, and for permission to report the findings.

BEDSIDE MEDICINE FOR BEDSIDE DOCTORS

An Open Forum for brief discussions of the workaday problems of the bedside doctor. Suggestions of subjects for discussions invited.

ACUTE EAR DISEASE IN CHILDHOOD

Wallace B. Smith, M. D. (490 Post Street, San Francisco).—*Symptoms.* In any discussion on the symptoms of acute ears in childhood, it is well to bear in mind that there is greater variability in the degree, as well as in the combination of symptoms in this, than in perhaps any other of the acute inflammatory diseases. We ordinarily divide the symptoms into those due to the reaction of the general system to the infection, and those due to the reaction of the middle ear and neighborhood. The general symptoms are similar to those of any of the acute inflammatory diseases, fever, malaise, anorexia, increased white blood count, with percentage increase of the polymorphonuclears; the fever being highest in the afternoon and ranging as high as 105 degrees. The local symptoms are pain, discoloration of the drum, loss of its details, and bulging. The discoloration varies from lack of luster to marked redness. There are two variations of importance: one in which blebs cover a portion or whole of the drum, and sometimes extend on to the external canal; the other, the grey drum. The former is usually indicative of the influenza organism as the cause of the otitis, and by the latter is meant the lusterless, grey-colored drum, usually due to sodden epithelium. It is easily wiped away, and the red drum is found underneath. The loss of details of the drum and bulging do not need further elaboration.

Fever is the outstanding symptom during any and all stages of an acute infection of the middle ear and mastoid, and any of the complications arising from it. When one is called to see a patient with fever of fairly rapid onset, and associated with severe pain in the ear and reddened drum, the diagnosis is simple and needs no discussion. If the fever is of more gradual onset, the appearance of the drum is pale, lusterless, details present, and with little or no complaint of pain, the diagnosis is less obvious. This condition may continue for several days with no apparent change save an increase in fever to 103-105 degrees. A close inquiry will usually bring out the history of a previous acute cold.

Most of us approach these patients with the feeling of arriving at a diagnosis by considering and excluding the following: (*a*) pyelitis, if the patient is a girl, and carry in our minds that there may elapse a period of from one to four or five days in a pyelitis before pus cells are present in sufficient quantity for diagnosis; (*b*) pneumonia, and that we may not be able to detect a central pneumonia until consolidation comes nearer the surface or recourse is had to the x-ray; (*c*) tonsillitis, which is more easily diagnosed and is of short duration—three to five days.

Once discharge from the middle ear has been established either by spontaneous rupture or incision of the drum, the fever usually recedes but does not become normal, and we enter a period of freedom from pain, a profuse discharge, and a general improvement. The great majority of cases go on to recovery from this point.

If from any of several reasons, such as virulence of the infecting organism, lowered resistance of the patient, anatomical formation of the middle ear, eustachian, or pneumatization of the temporal bone, we are to have a mastoiditis, we should bear in mind certain facts which, from long experience and careful observation, have become landmarks in otology. The common pathologic form of mastoiditis is the acute coalescent type which takes two full weeks to develop, and for this reason the third week is the week of complications; so that symptoms during and after the third week have greater significance than during the time before discharge is established and for almost two weeks afterward. The high fever before perforation or incision means less than a fever of, say, 102 degrees after the second week. Mastoid tenderness is rather generally present early in the infection, even before rupture, and does not mean surgical mastoiditis. It usually subsides within a few days. The tenderness which develops after two weeks, however, has other significance, especially if certain anatomical points of tenderness are observed; though not all points are equally involved, and not all are necessarily involved at the same time. They are the tip of the mastoid, the point corresponding to the antrum, the point corresponding to the superior border of the petrous bone, the region posterior to the course of the sigmoid sinus before it turns up to form the bulb, and the posterior portion of the zygoma in front of the ear. There also develops a certain character of the pus which is an aid, but is rather an intangible sign. For instance, pus from the breaking down of the intercellular bone does not contain mucus; the mucoid element in the ear discharge is contributed by the mucous membrane of the middle ear. The pus of a coalescent type of mastoiditis has a larger element of bony pus than mucoid material, though both are present. The bone pus is of cream-like consistence, yellowish grey, and not having mucin does not "string" out when wiped away with cotton-tipped applicator; and, the third week increase in quantity of the discharge will indicate more than just a middle-ear involvement. The sagging of the posterior superior wall which occurs at this time must extend the length of the canal from the drum outward. If it is located only in the cartilaginous portion of the canal, it has no relation to mastoiditis. And, lastly, the continuous diagnostic exclusion of other diseases showing pyogenic temperature curves, attention being called again to those previously mentioned, namely, pyelitis, pneumonia, and tonsillitis. If the condition has been unilateral, the good ear must be seen daily. Often there is involvement of the cervical gland by the original infection which caused the otitis. These cases have at times been the cause of a close differential diagnostic study in probable mastoiditis, as the problem may hang on what is the cause of the fever, the middle ear—mastoid, or the cervical adenitis.

Blood counts give information which is of value, but like that derived from blood culture and x-ray studies, it should rarely, if ever, be the deciding point of a surgical interference either pro or con in the coalescent type of mastoiditis.

The other pathologic type of mastoiditis, known as the osteothrombophlebitic type, in which the small vessels of the mastoid are early filled with thrombi—these in turn acting as pathways of infection to the intracranium and to the blood stream—run such a stormy course that diagnosis and procedure are usually obvious. The fever is very high, the pain of the middle ear infection is also in the mastoid, the discharge is serosanguineous and profuse, there is exquisite tenderness over the whole mastoid and beyond, general prostration is present with severe headache on the affected side, blood count high, percentage of polynuclears high, and if the blood culture is taken at the right time it is apt to be positive. And as it may run a fatal course before there is any breaking down of the bone, the x-ray will not be a benefit, nor will there be sagging of the posterior superior wall. This clinical picture is different from that of a severe otitis media in which we have a continuation of the fever for four or five days after the establishment of drainage. In the otitis media the fever is the only outstanding symptom and the other symptoms are not out of their customary proportion. Fortunately the osteothrombophlebitic type of mastoiditis is only met with occasionally, and for that reason in our daily practice it does not occupy the place of importance of the coalescent type.

Local conditions around the ear which resemble mastoiditis and which must be excluded, are:

(*a*) Swelling and redness on the mastoid process due to infection of the postauricular lymph node to which infection drains from the scalp on that half of the head. Any comb scratch, sore, or scalp break may give entry to the lymph stream of an infection sufficient to infect this node. The consequent swelling and redness of the soft parts over the mastoid are typical of an acute mastoiditis, with rupture through the mastoid cortex and soft part involvement. In lymph node infection the drum is normal, as is the hearing, and there is no discharge.

(*b*) Extension of the swelling of an external otitis from the external canal over the mastoid bone.

(*c*) Erysipelas starting in the folds of skin around the cartilage of the external ear which will produce a swelling simulating that due to mastoiditis. Erysipelas is not an infrequent visitor to this region, and usually runs a mild course.

* * *

Simon Jesberg, M. D. (500 South Lucas Avenue, Los Angeles).—*Treatment.* The incidence of acute middle ear infections is much greater in children than in adults. This is due probably to the greater susceptibility of children to upper respiratory tract infections, and the preponderance of lymphoid tissue in the throat and epipharynx, as well as a greater patency of the eustachian tubes. In addition, contagious diseases, mainly measles and scarlet fever, are more prevalent in childhood. These are often complicated by ear involvement.

The diagnosis of middle-ear involvement is made by direct inspection of the drum membrane. Redness of the drum with obliteration of the landmarks can be taken as a reliable sign of middle ear involvement. In very young children the drum does not bulge as much as in older children and, therefore, this sign is often lacking, or little in evidence. On the other hand, the systemic symptoms are much more pronounced in younger children, fever is often high and convulsions may occur. There are all gradations of severity of infection, showing as signs from a mild hyperemia of the drum to signs of intense inflammation and with systemic symptoms in accord.

When the diagnosis of middle ear infection is definitely made, the course of treatment is indicated by the severity of symptoms and the local findings. If there is only a mild systemic reaction and the drums show no great change, one is justified in waiting and using some palliative treatment, the favorite being phenolized glycerin. A few drops of five per cent phenol in glycerin are warmed and instilled into the ear canal. This will allay the earache in most mild infections. If these symptoms do not abate in twenty-four hours, or if there is evidence that the condition is getting worse, such palliative measures should not be further relied upon.

Middle ear infections, except those mild inflammations of transient duration, demand drainage and the sooner this is instituted the quicker will the disease be cured. To deliberately wait for spontaneous rupture of the drum to occur is absolutely unjustifiable. While nature thus attempts to relieve the condition, there is grave danger of extension to the mastoid cells, an extension that probably would not happen if early artificial drainage had been provided by a drum incision. Moreover, a drum properly incised never fails to heal after the infection is cleared up, but spontaneous ruptures of the drum often leave a permanent opening. A good rule to follow is: "When in doubt, open the drums." This applies particularly to ear infections in young children; and while the symptoms are perhaps never severe, still there is persisting evidence of middle ear inflammation. Sometimes the severity of the systemic symptoms are out of all proportion to the local ear findings, yet when the drum is incised the whole picture takes a definite turn for the better.

Anesthesia.—Ether is my preference. It is given with an open mask or a handkerchief over the mouth and nose. Induction is as rapid as possible without suffocation. In about sixty seconds the child is sufficiently anesthetized to perform the incision and wakes promptly, usually in a pleasant state of mind. Ethyl chlorid, while technically more dangerous, is also satisfactory. Nitrous oxid is more inconvenient to give, but is generally satisfactory. As there is usually an acute respiratory infection present the use of ether has been thought by some to be contraindicated. I do not believe that, given as described above, there is any added risk by using ether.

Local Anesthesia. — Bonain's solution: equal parts of cocain, menthol and phenol, is about the best. Even this, however, does not ordinarily produce complete anesthesia. A minute fragment of cotton, loosely wrapped on the end of an applicator, is dipped into the solution. It is then removed from the applicator with a fine Hartman forceps and laid on the drum. Analgesia is produced in from twenty to thirty minutes. It is a poor policy that inflicts unnecessary pain on a young child, thereby making it intractable, not to consider the permanent results of psychic trauma. To attempt to perform a myringotomy without any anesthesia is beyond my conception of a physician's duty.

If spontaneous rupture occurs, one should carefully observe that drainage is adequate. Usually a myringotomy should also be done.

Cleansing of the Ear Canal.—It is essential that the canal be kept free of pus by some means that does not favor complications. Irrigation of the ear can be an agent for good or evil in the course of the disease. Inasmuch as it is the most used method, certain factors should be considered. Pressure applied by either plugging the canal or using too strong a stream may favor extension of the infection. Solutions should be sterile, isotonic, and the solution temperature should not be over 110 degrees Fahrenheit. The method I have found most practical for home treatment is the use of physiological salt solution with one per cent sodium bicarbonate introduced with a soft rubber ear and ulcer syringe. The mother is carefully instructed to straighten the canal by traction on the pinna. The tip is placed just within the meatus and a gentle stream is directed toward the drum. One or two syringefuls are enough to cleanse the canal of all pus. It is needless to say that the solution and syringe are sterilized by boiling.

Dry Treatment.—A small twist of sterile cotton wound on an applicator, and so that it projects beyond the end, is placed in the canal. The tip of the wick should be in contact with the drum. This is changed frequently, as often as every ten or fifteen minutes when the discharge is profuse. The more I use this dry treatment the less I think of irrigation, and I believe that it is better adapted for the promotion of drainage which, after all, is the end in view.

One must be on the alert for mastoid complications, but one should never become much concerned by symptoms pointing to mastoid inflammation until the middle ear has been adequately drained for forty-eight hours. It is not an uncommon occurrence to have retro-auricular swelling in very young children, which completely subsides after adequately draining the middle ear by myringotomy. The early decision on mastoid operation without adequate middle ear drainage is certainly not in keeping with the honorable practice of our profession. When symptoms of mastoiditis persist after the middle ear has been properly cared for, surgical intervention may be indicated. By far the greatest number of actual mastoid infections get well by proper middle ear drainage, but when progress toward recovery stops, operation on the mastoid must be considered. Symptoms pointing toward intracranial involvement generally are indications for mastoidectomy.

In young children, ear infections associated with severe gastro-enteritis (Mariot's syndrome) bring about a most distressing condition and often a fatal termination. Here a rapidly performed antrotomy may save the child's life. A prolonged operation should not be considered and, fortunately, children of this age have only one or two mastoid cells, which can be drained in a few minutes with a turn or two of a curette.

Middle ear suppuration that persists for more than three weeks, even without appreciable systemic symptoms, demands a consideration of the mastoid condition. The determination as to whether mastoid drainage is necessary will require x-ray study in many cases.

Finally, it is my opinion that tonsil and adenoid surgery should not be undertaken while there is acute or subacute suppuration of the middle ear. I have observed several times a lighting up of complications that probably would not have occurred had the tonsil surgery been deferred.

* * *

Howard W. Fleming, M. D. (384 Post Street, San Francisco). — *Complications.* The complications of acute and chronic infections of the ear are serious. Though only a small percentage of the total number of patients with otitis media develop intracranial complications, the resultant mortality of such complications is high and, therefore, chronic running ear is to be considered a potential danger.

Yeager reports that 10 per cent of the patients with suppurative otitis media, entering Cook County Hospital, had intracranial complications. This high incidence probably is explained by the fact that only seriously ill patients were admitted to the wards. The most common complication was meningitis, which comprised five per cent of all cases in Yeager's series; sinus thrombosis accounted for three per cent; and brain abscess for two per cent. Labyrinthitis is a less common complication.

Prophylactic measures should receive the chief emphasis. No doubt this phase of the subject will be covered adequately by the otologists. I feel, however, that the menace of the chronic running ear is not appreciated by the profession as a whole, and certainly not by the laity.

Meningitis, the most frequent complication, is by far the most serious. Many otologists feel that a true meningitis of otitic origin is always fatal. In their opinion the recovery of a patient on whom such a diagnosis was made is indicative of a mistaken diagnosis. This extremely pessimistic outlook is hardly justified in view of the many carefully observed patients who have survived. We certainly are not justified in withholding therapeutic efforts, even though the hope of recovery is extremely slight.

Unfortunately, cases of meningitis, brain abscess, and sinus thrombosis frequently do not present the classical textbook pictures. However, a careful examination usually will elicit some symptoms or signs that denote an intracranial complication. Headache, nausea, vomiting, and stupor are symptoms of increased intracranial pressure. Paresis, numbness, aphasia, incoördination and defects in the visual fields are significant localizing signs. The presence of Kernig's sign and stiff neck, in association with chills and fever, denotes an infectious intracranial process.

Given findings which indicate that some intracranial complication is developing, the following diagnostic procedures are of value in determining the site and nature of the disease process. The history of acute or chronic infection of the ear is a good lead as to the source of the infection, but one must not lose sight of the fact that there may be some other coexisting etiologic factor. Epidemic meningitis, pulmonary infection, nasal sinusitis, tuberculosis, and syphilis should be considered.

Very careful examination, particularly of the nervous system, often will give important localizing signs. These examinations, repeated frequently, will disclose signs that usually suggest and often confirm the diagnosis. Defects in the visual fields frequently are the determining factor in the diagnosis of abscess of the temporal lobe. Only too often this important diagnostic test is omitted while the patient is still coöperative.

As a rule the temperature, pulse and leukocyte count are increased markedly in cases of meningitis and sinus thrombosis, whereas brain abscess rarely causes marked general systemic reactions. Suggestive symptoms of septicemia indicate the necessity of blood cultures.

X-ray examinations frequently are helpful. Diseased mastoids or infected sinuses suggest the focus that must be eliminated. A lateral shift of the pineal shadow is diagnostic of a space-consuming lesion, probably an abscess, in the syndrome under consideration.

Spinal puncture is probably the examination of greatest value. The risk of medullary herniation or infection is minimal if the procedure is done carefully, and the value of the information obtained far outweighs the dangers involved. The intraspinal pressure should be measured carefully by means of a manometer. Estimation by the number of drops per minute, or the length and force of the stream, is inadequate. The pressure is increased in all the conditions under consideration, and a normal or low pressure is of negative value.

There is considerable debate as to the value of the Quackenstedt test in cases of sinus thrombosis. Questionable reactions may leave one in doubt, but evidence of block is strong confirmation of sinus involvement. It is well to remember that, in a large percentage of people, the right lateral sinus and jugular vein convey a larger amount of blood, and an obstruction of this side is of more significance than one of the left side.

Laboratory examination of the fluid will determine the number of cells present and their type. Meningitis usually is characterized by a high cell count, ranging from a few hundred to several thousand. Brain abscess and sinus thrombosis, if uncomplicated, rarely show more than fifty cells. Only too frequently these conditions may be complicated by each other.

The demonstration of bacteria by stained smear or culture is the only criterion on which true meningitis can be diagnosed. The absence of bacteria, even in the presence of many cells, gives a much more hopeful prognosis. No doubt many of the cases of meningitis secondary to ear infection in which cure was obtained, were cases of sterile or serous meningitis.

The type of organism responsible for the infection influences the prognosis very materially. Tuberculous or pneumococcal meningitis is almost invariably fatal. Streptococcal or influenzal meningitis offers a somewhat better prognosis.

A detailed description of the treatment of meningitis, abscess, and sinus thrombosis is not practical. Very few surgeons agree as to the methods, and each case presents a problem of its own. Only a few general principles can be given here.

The focus of infection should be drained thoroughly as soon as possible. This usually requires a mastoidectomy. The clinical picture will suggest the necessity of adequate exposure of the lateral sinus, or the dura in the middle or posterior fossa. The pathologic changes disclosed at operation, in conjunction with the clinical picture, will determine the advisability of opening the sinus and tying the jugular vein, or exploring the brain for abscess.

Personally, I feel that in cases of true meningitis, lumbar drainage by frequent spinal puncture or laminectomy is in order after adequate drainage of the focus is obtained. I have seen patients with true meningitis, secondary to sinus or ear infection, recover when this method was employed. Also all patients for whom constant drainage was employed lived far longer and seemed to have a much better chance of survival than those patients treated without it.

The prognosis in brain abscess is far better. The type and virulence of the organism, and the ability of the brain to form a protective wall about the abscess, largely determine the prognosis. There is much discussion as to the methods of evacuating the abscess, but I think there is uniform agreement that the longer one can wait before instituting surgical interference the better is the outlook.

In conclusion, I wish to emphasize the prevention, if possible, of chronic suppurative disease of the ear; the proper care of such disease if present; the seriousness of intracranial complications and the desirability of their early diagnosis; and, finally, the necessity for active and sustained therapeutic effort in all such cases.

California and Western Medicine
Owned and Published by the
CALIFORNIA MEDICAL ASSOCIATION
Official Organ of the California and Nevada Medical Associations
FOUR FIFTY SUTTER, ROOM 2004, SAN FRANCISCO
Telephone Douglas 0062
Address communications to the EDITOR, as per the above address.

EDITOR . . . . GEORGE H. KRESS
Associate Editor for California . . . . EMMA W. POPE
Associate Editor for Nevada . . . . HORACE J. BROWN

Advertising Representative for Northern California . . . . L. J. FLYNN, 544 Market Street, San Francisco

Subscription prices, $5.00 ($6.00 for foreign countries); single copies, 50 cents.

Volumes begin with the first of January and the first of July. Subscriptions may commence at any time.

Change of Address.—Request for change of address should give both the old and the new address. No change in any address on the mailing list will be made until such change is requested by county secretaries or by the member concerned.

Advertisements.—The journal is published on the seventh of the month. Advertising copy must be received not later than the 15th of the month preceding issue. Advertising rates will be sent on request.

Responsibility for Statements and Conclusions in Original Articles.—Authors are responsible for all statements, conclusions and methods of presenting their subjects. These may or may not be in harmony with the views of the editorial staff. It is aimed to permit authors to have as wide latitude as the general policy of the journal and the demands on its space may permit. The right to reduce or reject any article is always reserved.

Contributions—Exclusive Publication.—Articles are accepted for publication on condition that they are contributed solely to this journal.

Leaflet Regarding Rules of Publication. — California and Western Medicine has prepared a leaflet explaining its rules regarding publication. This leaflet gives suggestions on the preparation of manuscripts and of illustrations. It is suggested that contributors to this journal write to its office requesting a copy of this leaflet.

EDITORIALS*

CALIFORNIA BOARD OF MEDICAL EXAMINERS AND EUROPEAN GRADUATES

Resolutions Regarding Graduates of European Medical Schools. — At the meeting on July 13, 1933, of the Board of Medical Examiners of the State of California, a resolution, which is appended to these comments, was adopted. The resolution outlines the conditions which the Board of Medical Examiners, by virtue of the powers vested in it through the State Medical Practice Act, has seen fit to demand of all graduates of European medical schools seeking legal license to practice medicine and surgery in California. A perusal of the resolution reveals that it deals with two groups of licensure applicants: one, with American students who have gone abroad to secure there their training and medical degrees, and another, with foreign citizens who, after receiving such medical training abroad, have migrated to America and wish the legal permission to practice in the State of California.

Matriculation Figures of the Scholastic Year 1932-1933.—It may be interesting in this connection to note, first, the extent to which American students are today matriculating in the medical schools of the United States. The figures here given are for the scholastic year 1932-1933: first-year students, 6,426; second-year students, 5,479; third-year students, 5,017; fourth-year students, 4,948; or, for the four classes, a total of 21,870 matriculants for the scholastic year 1932-1933. Not without significance, also, is the fact that when the fall term of 1933 began, a few months ago, there were some 31,429 applications for entrance to first-year classes. To be sure, this large number represented duplications, because some students had applied to two or more schools. There were actually 12,280 different applicants; and of this number, 7,357 were deemed to have satisfactory credentials, but 4,923 applicants were refused. Of 7,357 freshman students admitted last year, 6,426 completed the freshman year work. In this connection it may be stated that there are four Class A medical schools in California: University of California, Stanford University, University of Southern California, and the College of Medical Evangelists; the first two located in San Francisco, and the last two in Los Angeles. All had fourfold or more applicants for admission than could be accepted. It is evident, therefore, that the present-day economic stress has in no way decreased the number of young Americans seeking to prepare themselves for professional careers. Professions other than medicine, such as law and engineering, present figures in line with those given above.

* * *

Many Applicants with Unsatisfactory Credentials Matriculate in European Schools.—It was stated that 4,923 applicants were found to have had unsatisfactory credentials. That the refusal by American institutions failed to daunt many in this rejected group (who probably also had parents possessing means to permit of their training elsewhere) is shown by the fact that eighty-two European medical schools reported a total enrollment of 1,911 American students! This phenomenon of American undergraduates taking their medical training abroad is quite comparatively recent, and has been construed as a "back door" method of securing a medical degree that would make for eligibility to take a state board examination by those whose preliminary education was insufficient for matriculation into American medical schools.

* * *

American Medical Boards Alert to the Menace.—Throughout the United States, members of state medical boards during the last few years have been quite disturbed at this new menace to the medical and licensure standards of the several states. The Federation of State Medical Boards of the United States some time ago passed resolutions of tenor similar to those adopted by the Board of Medical Examiners of the State of California.

---

* Editorials on subjects of scientific and clinical interest, contributed by members of the California Medical Association, are printed in the Editorial Comments column, which follows.

The California resolutions, in brief, provide that an American matriculating in a European school subsequent to the present academic year shall be called upon to procure proper examining board credentials before going abroad, must satisfactorily pursue a course of training equivalent to that demanded of California students, and when a medical degree has been obtained abroad, must secure a license to practice in the country in which his degree-granting school is located.

The resolution also provides that a foreigner who possesses a medical degree granted by a foreign institution, must give evidence that the school from which he was graduated maintains standards equivalent to those of the accepted schools of America. He must also pursue a fourth-year course in an American medical school, or, in lieu thereof, have a two years' internship credit in an approved hospital of the United States. It may be assumed that these provisions are in harmony with the viewpoints of the majority of physicians who are in active practice.

* * *

Text of the California Board Resolutions.—The resolutions adopted by the California Board at its July 13 meeting, follow:

Whereas, An increasing number of medical students are leaving the United States for the purpose of studying medicine in foreign countries; and

Whereas, The standards of medical education in other countries are not always equal to the high standard maintained by approved medical colleges in the United States; and

Whereas, It appears from the experience of the California Board of Medical Examiners that it is becoming increasingly difficult to verify the medical credentials of applicants to this Board who claim to have completed a full course of medical study in some foreign country; and

Whereas, The standard of preliminary, premedical and medical educational requirements exacted of graduates of medical colleges is specifically set forth in the Medical Practice Act of the State of California; now, therefore, be it

Resolved, That no American student matriculating in a foreign medical school subsequent to the academic year 1932-1933 will be admitted to a written examination for a license to practice under the provisions of the Medical Practice Act of the State of California, who, before commencing his course of medical study, does not secure from some state board of medical examiners in the United States, or other competent state authority in the United States, a certificate satisfactory to the Board of Medical Examiners of the State of California showing that, prior to commencing the study of medicine, said applicant has completed at least a one-year course of college grade in the subjects of physics, chemistry and biology, as set forth in Section 9 of the California Medical Practice Act; and be it further

Resolved, That no student matriculating in a foreign medical school subsequent to the academic year 1932-1933 will be admitted to examination for a license to practice under the provisions of the California Medical Practice Act, who does not present evidence satisfactory to the Board of Medical Examiners of this State showing that he has fulfilled the premedical educational requirement heretofore mentioned and, in addition thereto, has graduated from a foreign medical school after completion of a medical course of at least four academic years, comprising no less than four terms of thirty-two weeks each, totaling four thousand hours, as required under Section 10 of the Medical Practice Act; and be it further

Resolved, That, in addition to the above mentioned premedical and medical education, each graduate of a foreign medical college who applies for a license to practice as a physician and surgeon in the State of California must present satisfactory evidence to the Board of Medical Examiners of this state that he has obtained a license to practice medicine in the country in which is located the medical school wherein he completed said course of medical instruction; and be it further

Resolved, That, in addition to the above requirements, any graduate of a foreign medical college, who presents satisfactory evidence to the California Board of Medical Examiners that he has fulfilled the above stated requirements of premedical and medical education, must, in addition to the above last-mentioned requirement, show satisfactory evidence that he has completed the fourth-year course in an approved medical school located in the United States or Canada, or, in lieu thereof, has completed a two-year internship in a hospital located in the United States and which said hospital is on the approved list compiled and/or published by the Council on Medical Education and Hospitals of the American Medical Association; and be it further

Resolved, That graduates of approved medical colleges located in the Dominion of Canada shall be exempt from that portion of this resolution relating to the fourth-year study in an approved United States medical college, or, in lieu thereof, a two-year hospital internship.

THE SAN FERNANDO PLAN—A HEALTH CENTER CURATIVE CLINIC EXPERIMENT

"Health Centers" of Los Angeles County.—Several years ago, because of the great increase of population in Los Angeles County, and other factors, this county instituted, as a part of the Health Department, the first of its health centers, of which there are now about one dozen. These health centers were established in different portions of this geographically large county, and were situated either in unincorporated territory, or in cities and towns which, by yearly contract, had turned over their public health work to the county's Health Department. The grounds and buildings of some centers were entirely paid for with county tax funds, but in other places local communities or individuals made donations to the building funds.

It was originally planned that each health center should not only be a central office and distributing point of local public health service, but should also have in connection therewith (where needs were so indicated) a curative clinic manned by local physicians and giving gratuitous service to the indigent sick of the district. However, as time went on, misunderstandings arose in several of the health centers between the personnels of the preventive public health work and the curative clinics, culminating finally in the adoption by the Board of Supervisors of a new plan whereby the curative clinics housed in the health center buildings became part and parcel of the out-patient service of the Los Angeles County General Hospital; the health center curative clinic staffs being appointed in a manner similar to other County Hospital staffs, and supervised by the executives of that institution.

* * *

Why the San Fernando Plan Came Into Being.—But even this much more desirable arrangement was found to be lacking in some important essentials, and the executive medical board of the County Hospital and the Los Angeles County Medical Association saw fit to recommend to the Board of Supervisors, through the County Welfare Department (of which the County Hospital is a unit) that the curative clinic in the city of San Fernando be discontinued, and that the work of caring for the indigent sick of that community be done in the private offices of the physicians who had been serving gratuitously in that local curative clinic. There was attached the further proviso that, for each socially serviced indigent patient who in regular course was referred to such a physician's office and treated, the physician should receive a nominal stipend of fifty cents per patient treated, for use of his personal equipment and office facilities.

* * *

A Preliminary Estimate of the Worth of the Plan.—The plan has been in operation for only about four months, and complicating factors (incident to charges for health center building upkeep and other items) have made it difficult to come to any final conclusions as to all the merits and the demerits of the new plan. It may be stated, however, that the members of the profession at San Fernando seemingly prefer the new method of procedure to the former clinic in the health center building, and that the plan also continues to have the approval and support of the administration of the Los Angeles County Hospital. At a meeting of the County Hospital executive medical board, held several days before the time of our writing, figures were submitted showing that, at the end of three or four months of the experiment under the new system of socially serviced indigent patients who receive treatment in private offices, the number treated was less than had been coming to the clinic in the health center building, and that the actual cost of the service rendered was something like $200 less per month. Mention is made of this new method of procedure, because it is an innovation in this type of work. If the medical and surgical services can be given as efficiently and at less cost to the taxpayers, with preservation of the personal physician-patient relationship, with retention to patient of self-respect through abolition of the pauper complex, and with ever so modest but satisfactory stipends to the staff physicians for the utilization of their offices and equipment, then this new San Fernando plan may find for itself a place in the readjustment procedures now being tried out, in efforts to care for the indigent sick by methods better than those in vogue in the past.

NOBEL PRIZE IN MEDICINE COMES TO CALIFORNIA

Dr. Thomas Hunt Morgan of Pasadena Receives the 1933 Nobel Prize in Medicine.—When one of the Nobel Prizes comes to a State, an institution or an individual, it is a matter of considerable moment. Californians, therefore, are gratified that the 1933 Nobel Prize for medicine should have been bestowed upon Dr. Thomas Hunt Morgan, director of the William G. Kerckhoff biological laboratories of the California Institute of Technology, to which institution he came from Columbia University in 1928. At the November, 1933, meeting of the Southern California Medical Association he was a guest speaker.

Dr. Robert A. Millikan, who is the director of the California Institute of Technology at Pasadena, and who received the Nobel Prize in physics in 1923 for his own achievements in that field, in speaking of the honor to Doctor Morgan, gave an excellent estimate of the doctor's researches, when he said:

> "The discoveries that are grouped around the ideas of chromosomes and genes—discoveries which enable us to connect hereditary qualities with actual minute objects observable in microscopes—represent probably as fundamental an advance in biology as has ever been made in history. It is altogether comparable with the discovery of the circulation of the blood by Harvey or of the germ theory of disease by Pasteur. This discovery and the whole group of developments that have been associated with it have been made by a group of Americans, of which Thomas Hunt Morgan has been the universally recognized leader for the past twenty years."

Members of the California Medical Association, in common with other citizens of the State, extend to Doctor Morgan their congratulations at the great honor given to him, and wish for him long years of continued work and pleasure in the field in which, through his own original labors, he has been able to add so much to the world's scientific knowledge.

VIOLATION OF STATE NARCOTIC ACT DANGEROUS

Letters of Doctors Geistweit and Pinkham.—In an open letter printed in last month's (November) California and Western Medicine (page 357), Dr. W. H. Geistweit, Jr., of San Diego, detailed some of his observations concerning the lack of knowledge possessed by applicants who sought licenses to practice medicine and surgery in California, and who took the July 1933 examination of the California State Board of Medical Examiners. Doctor Geistweit's criticisms of our medical schools, in permitting young men to start out in practice without adequate knowledge of narcotic laws which, if violated, might seriously imperil the future of the transgressors, are, in our opinion, more than justified. Members of the California Medical Association may well take the time to read Examiner Geistweit's comments and to ponder thereon. The attention of the faculties of the four California medical schools is also directed thereto.

Comes now, to the editor, as the December California and Western Medicine is being prepared for press, another letter, also dealing with the Federal and State Narcotic Acts. With this difference, however, that the criticisms made are directed against physicians in active practice who, if arrested for violation of the State Narcotic Act, would be subjected not only to humiliation, but to the danger of losing much of their practice in the development of which they had given years of effort and service.

The matter is of so much importance that the letters from Dr. C. B. Pinkham, secretary of the California State Board of Medical Examiners, and of Inspector J. W. Davidson, special agent of the board, are here reprinted for the information of California Medical Association members.

* * *

420 State Office Building
Sacramento, California,
November 20, 1933.

Re: Narcotic enforcement.

To the Editor:—We submit herewith enclosed a copy of a report written us by our Special Agent Davidson, dated November 14, 1933, drawing attention to the prevalence of doctors furnishing narcotics to confirmed addicts, based upon an alleged permit which these addicts may carry.

We leave to your judgment whether this merits special mention in "California and Western Medicine" warning doctors against this procedure, and suggesting that they confiscate any alleged "permits" that may come to their attention.

Very truly yours,
C. B. Pinkham, M. D.,
Secretary-Treasurer.

* * *

San Francisco, California,
November 14, 1933.

Re: Narcotics
(Clarence ———, alias Clarence ———).

Dr. C. B. Pinkham,
Secretary-Treasurer, Board of Medical Examiners,
420 State Office Building,
Sacramento, California.

Dear Doctor:

The Narcotic Division has informed us that recently they have received reports showing the prescribing of morphine sulphate to the above-named addict, in each case stating that this man holds what purports to be a permit from the State Board of Pharmacy for him to have narcotics, as he is suffering from chronic asthma and angina pectoris.

This addict was recently arrested in Pasadena and at that time had $130 in one-dollar bills in his pocket. However, the Municipal Court dismissed the case; reason not known.

From a report filed November 2, 1933, by Dr. ———, Anaheim, California, he furnished this man eighty one-half grain tablets of morphine sulphate, to last one week, stating that this man had been an habitué for twenty-eight years and he furnished him narcotics because of the purported card authorizing the issuance of same.

Regardless of the warnings sent out by the Board, there seems to be no way that we can get the medical profession to use ordinary common sense in the handling of narcotics, and in the case of Clarence ———, the narcotic agent at Los Angeles had requested permission to arrest all of the doctors involved; however, authority so to do was not granted him and he was instructed to confer with the federal narcotic representatives in Los Angeles.

Is there any way that we could get coöperation from the various publishers of county medical bulletins, including "California and Western Medicine," to give publicity to the fact that there is no such authorization under the laws of the State of California or the Federal Government, showing that an addict is authorized to receive narcotics; and if any addict calls at the office of a licentiate and offers any such document, the licentiate should take that document and keep it and immediately notify the police. The issuance of narcotics to addicts upon any such purported document, without the physician first making a physical examination and satisfying himself (the licentiate) that the patient has a pathology indicating the use of narcotics, is a violation of the law, and subjects the licentiate issuing such prescription or furnishing narcotics to such a person, to arrest for violation of the State Narcotic Law, with the subsequent humiliation that goes with it, as well as the reflection upon an honorable profession.

We are informed by those responsible for observance of the State Narcotic Act that if the medical profession insists upon being lax in prescribing narcotics, it may entail arrest in every case, and we are writing this with the hope that some publicity given the matter may engender respect for the state law.

The following named licentiates have recently reported Clarence ———, alias Clarence ———, as having one of these purported permits:

(Editor's Note.—List includes two physicians from Pasadena, one from Los Angeles, three from Long Beach, one from Orange, and one from Anaheim. Names are here omitted.)

Very truly yours,
J. W. Davidson,
Special Agent.

EDITORIAL COMMENT*

THE RÔLE OF HYDROGEN ION CONCENTRATION (pH) IN CERTAIN OCULAR SYMPTOMS

The effect of the hydrogen ion concentration in tears or various medicaments dropped into the conjunctival sac seems to have received little or no attention in English or American ophthalmic literature until Gifford and Smith[1] called attention to it recently. A number of foreign investigators have published reports on the hydrogen ion concentration in normal tears, but they are by no means in agreement. Some investigation of the pH of tears in pathologic states have been recorded, notably those of Oguchi and Nakashima,[2] who worked principally on trachoma. They devised a technique for estimating the pH of conjunctival secretions as distinguished from the pH of the tears.

Gifford and Smith pointed out the advantages of suitably buffered solutions as a vehicle for the common therapeutic agents used in the eye, but the correlation of certain ocular symptoms with the hydrogen ion content of the tears has not been sufficiently studied, nor has the relief of symptoms, which is possible by a modification of the pH of the fluids in contact with the cornea and conjunctiva, been adequately investigated.

Therapy of corneal and conjunctival conditions is at present empirical and far from satisfactory.

---

* This department of California and Western Medicine presents editorial comment by contributing members on items of medical progress, science and practice, and on topics from recent medical books or journals. An invitation is extended to all members of the California and Nevada Medical Associations to submit brief editorial discussions suitable for publication in this department. No presentation should be over five hundred words in length.

[1] Gifford and Smith: Effect of Reaction on Ophthalmic Solutions, Arch. Ophth., Vol. 9 (Feb.), 1933.

[2] Oguchi and Nakashima: Hydrogen Ion Concentration of the Tears, Arch. f. Ophth., 119:300, 1927.

It is possible that much of the good effect attributed to various therapeutic agents depends on a modification of the pH of the tears. It is a suggestive fact that the rate of healing of the bruises sustained by ornamental tropical fish during shipment is profoundly modified by the pH of the water in which they live. Substances of the right degree of solubility and dissociation to produce a prolonged but slight modification of the pH of tears are by no means easy to find or devise, yet such substances probably offer therapeutic possibilities of great value. The effect of the pH on the bacteriolytic enzyme, lysozyme, must be considered. The efficiency of this enzyme is impaired by comparatively small amounts of acid or alkali, as well as by other chemical reagents.[3]

Cell permeability is greatly modified by reaction; for example, a one per cent cocain solution at pH 8.7 is seven times more powerful than the same solution at pH 3.2.[4] Many students of glaucoma believe that its cause lies in the altered permeability of cells to ions and water, and that the pH of the intra-ocular fluids plays an important part in the disease and in its treatment with drugs. As the cornea acts as a semi-permeable membrane, it is conceivable that the pH of the tears has some relation to that disease. The rôle of the other ions present in the tears, particularly the chlorid ion, may be a fruitful field of investigation.

In the not distant future, apparatus for the determination of hydrogen ion concentration may become as essential as the ophthalmoscope to the practice of ophthalmology.

490 Post Street.

George N. Hosford,
San Francisco.

RELAPSING FEVER IN CALIFORNIA*

During the past three years, studies have been made of several California strains of relapsing fever spirochetes, of human and animal origin. Comparisons have been made between some of these strains and *Sp. novyi*, *Sp. duttoni*, and certain Texas strains. The work has been detailed in four papers, which will appear in the *Journal of Infectious Diseases*.

This report merely summarizes some of the outstanding opinions and conclusions of the author regarding the California strains.

1. Three human strains cause a more severe infection in mice than either *Sp. novyi* or *Sp. duttoni*. This may be due to the more recent isolation of the former.

2. Symptoms in mice which were attributable to nerve lesions were noted.

3. Cryptic infections in guinea-pigs were observed with two strains. The serum of these animals was not protective. In later work, typical infections in guinea-pigs were obtained, and their serums showed protective properties.

4. There appeared to be little, if any, difference in the virulence of blood taken during the primary attack and the first two relapses.

5. Immunity of variable duration is produced in mice by California strains. It makes no difference whether the test inoculations are made with blood from the same or a different stage of the disease from that which produced immunity.

6. There is cross immunity between homologous spirochetes in blood from different stages of the disease.

7. Complete passive immunity has been conferred to mice with the serum from recovered mice.

8. Complete cross protection has been obtained between several California strains. Several of these are probably identical, and a very close relationship exists between others. The areas from which some of these strains had their origin are several hundred miles apart.

9. Three mice hyperimmunized to a California strain (LN) were protected against *Sp. novyi*. The possibility is recognized that there may be a very close serologic relationship between *Sp. novyi* and our California strains. From the history of *Sp. novyi* it is possible that this strain may have originated in Texas (Galveston ?), or some port in Mexico or Central America; and because of the probability that this strain and the California strain may have a common vector (*O. turicata*), particular attention is called to this result. This opinion is given further support by the findings of St. John and Bates[1] regarding the close relationship between *Sp. novyi* and the Panama strain.

10. The serum of a guinea-pig immunized against a Texas strain (Fall Creek) completely protected mice against large doses of the spirochetes of one California strain (162), and caused considerable delay in infection with two other California strains (LC and 334), of widely separated origins. It is highly probable that certain Texas and California strains may be closely related, if not identical.

11. From certain of my experiments it is believed that a more accurate technique, taking into account differences in virulence, should be employed in cross-immunity tests. Where such differences occur by a more careful management of the dosage, a relationship can be shown to exist between heterologous strains which, by grosser methods, would be considered to have only individual specificity.

12. Exhaustive tests with adult Sierra golden mantle ground squirrels (*Callospermophilus chrysodeirus, chrysodeirus* Merriam) showed that this species is probably immune from relapsing fever.

George Williams Hooper Foundation for Medical Research,
Second and Parnassus avenues.

George E. Coleman,
San Francisco.

---

[3] Fleming and Allison: A Bacteriolytic Ferment Found Normally in Tissues and Secretions, Lancet, 1:218 (Feb. 2), 1929.

[4] Regnier: The Influence of the Concentration of Hydrogen Ions—Anesthetic Properties of Cocain, Bull. des Sciences Pharmacol., 31:513, 1924.

* A preliminary report.

[1] St. John, L. H., and Bates, L. B.: Am. J. Trop. Med., 2:251-266, 1922.

TULAREMIA

During recent years a number of cases of tularemia of the ulceroglandular type, with the initial lesions on the external genitalia, have been encountered.

The punched-out ulcer, the inguinal adenopathy and the macular rash that are sometimes seen in tularemia may simulate certain phases of syphilis to a striking degree. The duration of the ulcer is practically the same as in syphilis. The inguinal adenopathy is usually more marked in tularemia, and the rash, if it does appear, is earlier.

Practically all the individuals give a history of a tick-bite at the site of the lesion. Whether the tick actually transmits the disease, acts as a mechanical carrier or merely opens a portal of entry for a contact infection, is not entirely clear.

Repeated blood Wassermanns and agglutination tests for *B. tularense* should be made for at least one month.

Tularemia should be considered in the differential diagnosis of lesions of the external genitalia in individuals coming from an area where this disease is endemic.

George R. Magee,
Yerington, Nevada.

RETINAL DETACHMENT—DIATHERMY PUNCTURE AND COAGULATION

Retinal detachment, formerly regarded as a hopelessly incurable disease, is now yielding very hopeful results, due to the modern operative treatment presented to the ophthalmological world a few years ago by Gonin. As this treatment is still in its developmental stage, changes in technique are being rapidly worked out.

The original Gonin operation was puncture of the sclera with the Paquelin cautery. Several modifications of this were then developed. Recently a visit to the various European clinics, where most of this work is being done, showed that the original Gonin cautery puncture was being replaced by various newer operations. Of all these various procedures, the Safar multiple diathermy puncture operation seemed to be the best, as well as the simplest.

To help evaluate the various methods of operating, frequent case reports of results obtained with one particular type of operation are helpful. Therefore, the following report on sixteen cases operated upon according to the Safar multiple diathermy puncture method are offered. It is also hoped that this will help dispel the pessimism about the hopelessness of treatment of retinal detachment that still exists in some quarters.

Of the sixteen unselected cases operated upon, eight being in only eyes, six were successful, giving a percentage of 37.5 cured. These cases were absolutely unselected, no patient being turned away, no matter how hopeless the outlook.

This percentage is very gratifying when the cases are further separated into favorable and unfavorable. Favorable cases are those of short duration (a few weeks), with one or two small holes and with no complications, such as high myopia, vitreous opacities, cataract or intra-ocular operative procedures previously performed. Of these six favorable cases, three, or 50 per cent, were cured.

There were ten unfavorable cases, including two which had previously been unsuccessfully operated upon by the Gonin method. Of these ten patients, three (including the two just mentioned) were successfully operated upon, giving 33 per cent cured.

Thus, in a total of sixteen cases of detachment of the retina, six, or 37½ per cent, resulted in cures; a very gratifying figure, which should stimulate everyone to energetic treatment of this disease.

490 Post Street.

Dohrmann K. Pischel,
San Francisco.

Protein Fever Treatment in Neurosyphilis.—In the treatment of neurosyphilis as previously reported, Nelson gives for each paroxysm of fever two separate intravenous injections of combined typhoid vaccine instead of one. After administration of the first dose, which is of a size calculated to cause slight fever, two or three hours is allowed to elapse for the patient's temperature to reach its height, this point being determined by taking the temperature every twenty minutes. At the peak of the fever induced by the first dose, the second injection is given. Following the second dose, which seems to "explode" a physiologic charge created by the first, the patient's temperature usually rockets to the levels characteristic of malaria: 105, 106, or even 107 F. The author states that, by means of this method, fever consistently higher than that produced by ordinary methods is obtainable. Treatment by this method is less dangerous than by malaria, is more convenient and widely available, and at the same time probably makes use of bodily immunity reactions similar to those induced by malaria. Treatment of patients with resistant neurosyphilis by this method has been followed by improvement equal to that observed in similar cases treated by malaria.—*Southern Medical Journal.*

The Modern View of Preventive Medicine.—It is not unusual to hear preventive medicine discussed as if it is something apart, something altogether different from other branches of medical work. Yet surely most leaders of medical thought have long since discarded this idea, if indeed they ever had it. For many years now it has been an instruction of the General Medical Council (that important body in England which practically directs medical education throughout the Empire, that during his whole course of training the medical student shall have impressed on him the preventive aspect. The British Medical Association in England has taken the same view, and in formulating its proposals in 1930 for a general medical service made it "a fundamental principle . . . that a satisfactory system of medical service must be directed to the preventing of disease, no less than to the relieving of individual sufferers."

In his daily round the medical practitioner is the best public health worker we have. He aims not only to cure his patient, but to keep him in health. He aims to prevent the mild disorder from becoming a serious disease, to ward off dangerous complications.

The preventive and curative branch of medicine are not things apart. They are inseparably joined, an essential unity. The work at the bedside, indeed all efficient clinical work, is really an important part of preventive medicine. "To heal the individual sufferer, to enable him to resume his place in society, and to assist him to avoid recurrences of his trouble—these surely are our aims." The present high status of our community health is in large part due to the quiet unobstructive labors of general medical practitioners.—*Public Health Notes,* South Australia Department of Public Health.

STATE MEDICAL ASSOCIATIONS

This department contains official notices, reports of county society proceedings and other information having to do with the state associations and their component county societies. The copy for the department is edited by the state association secretaries, to whom communications for this department should be sent. Rosters of state association officers and committees and of component county societies and affiliated organizations, are printed in the directories noted under Miscellany, on the front cover index.

CALIFORNIA MEDICAL ASSOCIATION

GEORGE G. REINLE ....President
CLARENCE G. TOLAND..............................President-Elect
EMMA W. POPE.......................................Secretary-Treasurer

OFFICIAL NOTICES

Council Meeting.—The next meeting of the Council will be held in the offices of the Association, room 2004, 450 Sutter Street, San Francisco, on Saturday, January 20, 1934.

* * *

Application for Place on Annual Program.—Members who desire to present papers before the 1934 annual session, which will be held at Riverside, should write to the secretary of the section before which the particular subject should be presented.

Names and addresses of section officers are regularly published on advertising page 4 of each issue of California and Western Medicine.

When requesting place on the program, a brief résumé of the paper should accompany the application.

* * *

Committee on Scientific Exhibits. — To stimulate greater interest in the scientific exhibit at the annual session, a special committee has been appointed by the Council: William J. Kerr, M. D., Lyell C. Kinney, M. D., Frederick Leet Reichert, M. D., Ernest M. Hall, M. D., and Elbridge Best, M. D., chairman.

* * *

Scientific Exhibits.—Those who are interested in planning a scientific exhibit at the Riverside meeting should apply for space to the Committee on Scientific Exhibits through the State Association office, room 2004, 450 Sutter Street, San Francisco, before the first of March, 1934.

In making application give title and description of exhibit with an estimated amount of floor and/or wall space required.

COMPONENT COUNTY MEDICAL SOCIETIES

CONTRA COSTA COUNTY

The November meeting of the Contra Costa County Medical Society, which was the annual business meeting, occurred on Tuesday evening, November 14, and was held as a dinner meeting at the Hotel Carquinez, Richmond.

The annual reports from the secretary-treasurer's office were read by Clara H. Spalding. Dr. Harry Ford moved that they be accepted, with a vote of thanks to Doctor Spalding. The motion was seconded by Doctor Carpenter, and passed by the society.

Reports of the committees, which have served during the current year most efficiently, were made as follows:

Committee on Public Relations—Dr. Harry Ford, chairman, who reported the plan recommended to the Board of County Supervisors.

Medical Economics—Dr. S. N. Weil, chairman.

Hospitals and Clinics—Dr. U. S. Abbott, chairman.

Health and Public Instruction—Doctor Fraser announced that several educational talks have been given by members to such organizations as the Parent-Teacher Associations. These undoubtedly help to disseminate medical information.

Membership—Dr. C. Spalding announced that six new names appear on the list of members since the beginning of the year. While several names of the members of the past year do not appear, for various reasons, the society has attained a net gain of one member.

History and Obituary—Fortunately, no need has arisen during the past year for the services of this committee.

Advisory to Woman's Auxiliary—Doctors Fraser, Abbott, and Weil reported activities of that very valuable body, and it was agreed they deserved a vote of thanks from the county society. Motion to that effect was made by Doctor Beard, seconded by Doctor Ford, and passed.

Under new business, suggestions and discussion followed, especially directed toward the activity of the Committee on Public Relations, which has given much time to the study of the mode of administering medical charity in the county. The plan drawn up by that committee, headed by Doctor Ford as chairman, ably assisted by Doctors U. S. Abbott, S. N. Weil, and McCullough and the officers of the society, as unofficial members of the committee, was discussed by Doctors Beard, Ford, Fraser, Walter Johnson, Daily, Dozier, Fitzgerald, and Carpenter. Among the suggestions tendered were:

1. A personal letter by every member of the society on his individual stationery, directed to the Board of County Supervisors, refusing further charity medicine unless the medical aspect be definitely removed from politics.

2. A specific demand upon the Board of Supervisors that they take some definite action upon the plan submitted to them about ninety days ago, and which they have never acknowledged.

3. Stress the fact that the plan submitted has the approval of the local society, the State Association, the College of American Surgeons, and the American Medical Association.

4. Publication of the plan that the general public may become informed of the details.

5. Newspaper publicity of the tremendous amount of medical charity being done in the county by private physicians, so that the public may become enlightened upon the subject.

6. That an ultimatum be issued to the Board of Supervisors, setting a time limit during which they shall be permitted to consider the proposed plan, beyond which the medical society shall proceed as they may see fit.

7. Offering again to meet in conference with the Board of Supervisors.

Accordingly, motion was made by Dr. Thomas Dozier, seconded by Doctor Carpenter, and unanimously passed by the members, that the present Committee on Public Relations, with a substitute for Doctor Beede, be authorized to proceed along any line that will best serve the wishes of the society, with full power to act as they think advisable.

Doctor Fraser named the committee, to consist of Doctors Harry Ford (chairman), U. S. Abbott, J. McCullough, S. N. Weil (secretary), and Thomas Dozier.

Doctor Ford requested a meeting at the office of Doctor Weil on the evening of November 16.

Doctor Fraser reported a meeting which he attended as a representative of the county medical society and which Dr. William Powell attended as a representative county officer, with the Pittsburg Health Center. The Pittsburg Health Center had arranged the meeting, asking advice as to how to proceed with their unit. Suggestion was made that they limit their activity to indigents, widen their scope, and that they would then be in a position to ask financial aid from the Board of Supervisors.

Dr. Kaho Daily, chairman of the Committee on Arrangements for the annual party, reported that it would be a dinner dance on December 16 at the Berkeley Country Club and that the price would be fixed at $2.50 per person. The members present agreed that the sum of $50 could be used from the county society treasury for that purpose. This is the amount that has been appropriated each year for several years past, but official sanction of the society has never before been given for this action.

Suggestions were made for increasing the size of the meeting and general pleasure afforded those who will attend by inviting the dentists and druggists to join with us. It was also suggested that a blanket invitation be sent by the secretary to the county societies of Napa, Solano, Alameda, San Joaquin, and San Francisco; those attending to come as pay guests.

The report of the Committee on Arrangements was accepted.

Dr. William Powell requested that the members of the profession be on the alert for cases of amebic dysentery, and warned them to report them promptly to the Health Department.

The subject of setting a fee schedule for Contra Costa County was discussed, deemed impracticable, and definitely shelved.

The Nominating Committee, Dr. S. N. Weil, chairman, suggested the following officers for the coming year: President, Dr. M. L. Stauffer of Pittsburg; vice-president, Dr. W. S. Lucas of Richmond; secretary-treasurer, Dr. Clara H. Spalding of Richmond. Censor for 1934-1936, Dr. Fred Nevius of Antioch. Delegate to the state convention, Dr. U. S. Abbott of Richmond. Alternate delegate, Dr. L. H. Fraser of Richmond.

No further suggestions being made, Dr. H. H. Carpenter moved that the secretary cast a unanimous ballot for the above-named officers. Motion was seconded and passed.

Doctor Weil suggested a rising vote of thanks for the excellent way in which Doctor Fraser, the president, has served the society in the past year, and Doctor Ford suggested the same courtesy to the secretary. After this gracious tribute, and a suggestion by Doctor Abbott for increasing the interest in the meetings for the coming year, and a suggestion by Doctor Ford for enhancing our membership, the meeting was adjourned at 10:10 o'clock by Doctor Fraser.

The attendance was the smallest of the year—fifteen—but those present agreed that the meeting around the dinner table had been most enjoyable.

Clara H. Spalding, *Secretary.*

⁂

ORANGE COUNTY

The Orange County Medical Society held its regular monthly meeting on November 7 at 8 p. m. in the Chapel of the Orange County Hospital. The meeting was unusually well attended, about seventy-five members being present.

Following the usual brief business session, Dr. C. D. Ball read the obituary of Dr. Frederick Pope.

Dr. Norman Kilbourne of Los Angeles, speaker of the evening, presented a paper on *Hemorrhoids—Shall Treatment Be by Operation or Injection? Comparative Results in a Survey of Sixty Thousand Cases. Elimination of Pain in Rectal Operations, Methods of Injection.* His talk indicated a vast amount of research and study, and his views were unprejudiced. The paper was well illustrated with lantern slides. A large number of questions were asked, and following this the meeting adjourned.

Waldo S. Wehrly, *Secretary.*

⁂

SACRAMENTO COUNTY

A regular meeting of the Sacramento Society for Medical Improvement was held at the Elks Temple on September 19. The president, Dr. George Briggs, called the meeting to order at 8:30 p. m. Sixty-three members were present.

There were no case reports.

The first paper of the evening, *Subarachnoid Hemorrhage,* was read by Dr. Frank Reardon. The classification and etiology of this pathological condition was first discussed, then the symptoms of the various types of subarachnoid hemorrhage were outlined. The diagnosis of subarachnoid hemorrhage is often difficult. A case was reported which was first diagnosed as a brain tumor. The paper concluded with seven case reports, several of them with autopsy findings.

The second paper of the evening was the report of a case of *Subarachnoid Hemorrhage* by Dr. Fredrick Gundrum.

Appreciation of the papers was voiced by Doctors Young, Van Den Berg, Vance, Dozier, Howard, and Burden.

The application for membership of Dr. Walter N. Becker was read for the second time and voted upon. Doctor Becker was accepted unanimously into membership. The applications for membership of Doctors Anthony R. Boscoe, George O'Brien, and Edward A. Anderson were read for the first time. The transfer of Dr. Masa Atsu Harada was read for the first time.

Doctor Wilson gave a talk on the social service department at the Sacramento County Hospital. Doctor Wilson's speech was discussed by Dr. Frank Brendel. Moved by Doctor Gundrum and seconded by Doctor Scatena that this society express itself as willing to develop some method whereby the sick who cannot be admitted to the County Hospital, yet who cannot pay full rates, can be cared for. Carried.

Doctor Schoff suggested that an outline of the plan be mailed to all members of the society for their approval.

A letter was received from Doctor True suggesting a method whereby food handlers can be examined at reduced rates by physicians. Doctor Briggs appointed the following Food Handlers' Committee to study this problem and report at the next meeting: Doctors Dozier (chairman), Young, True, and Christman.

Frank Warne Lee, *Secretary.*

⁂

SAN BERNARDINO COUNTY

The November meeting of the San Bernardino County Medical Society was held at the County Hospital on Tuesday, November 7. The meeting was opened by the president, at 8:10 p. m.

Pursuant to the By-Laws, the proposed amendment published in the Bulletin was discussed. Dr. S. B. Richards suggested some changes, but no motion was carried making any.

Dr. V. Pinkley gave a short talk on certain phases of the management of the county charity hospital.

Announcement was made that the Riverside County Medical Society proposed to invite the San Bernardino County Medical Society to hear Dr. E. C. Rosenow of the Mayo Clinic, who will speak at Riverside, probably on December 20. Notice of the exact date will be given later.

The following paper was then presented: *Agranulocytic Angina and the Malignant Neutropenia of Sepsis, with a Report of Four Cases.*

Doctor Garcelon being ill, this paper was read by Dr. George Landon. Discussion was opened by Doctor Neubert and continued by Doctor Harpham and others, and was closed by Doctor Landon.

The second part of the program was incomplete, as only one interesting clinical case was shown by the medical staff. The remaining time was filled in by Dr. Ivan Finkleberg, who showed motion pictures of the Century of Progress. E. J. Eytinge, *Secretary.*

⁂

SAN JOAQUIN COUNTY

The stated meeting of the San Joaquin County Medical Society was held in the Medico-Dental clubrooms, 242 North Sutter Street, Stockton, Thursday, November 2.

The meeting was called to order at 8:15 p. m., with Vice-President Gallegos in the chair.

The applications of Dr. Neill P. Johnson and Dr. T. E. Zinkan for membership in the San Joaquin County Medical Society were read and referred to the Committee on Admissions.

The nominations for officers for 1934 resulted as follows:

President—Percy B. Gallegos, J. M. Hench.

First Vice-President—H. J. Bolinger, A. R. Powers.

Second Vice-President—E. L. Blackmun, S. E. Latta.

Secretary-Treasurer—F. S. Marnell, G. H. Rohrbacher.

Board of Directors—N. P. Barbour, C. A. Broaddus, L. Dozier, J. F. Doughty, E. C. Griner, H. E. Kaplan, S. W. R. Langdon, R. T. McGurk, J. E. Nelson, B. J. Powell, Jr., D. R. Powell, G. H. Rohrbacher, G. H. Sanderson, T. L. Sutton.

Admissions Committee—C. A. Broaddus, F. J. Conzelmann, J. D. Dameron, L. Dozier, C. F. English, J. P. Hull, F. A. McGuire, H. C. Peterson, B. J. Powell, Jr., G. H. Rohrbacher.

Ethics Committee—J. E. Barnes, J. F. Doughty, E. C. Griner, R. T. McGurk, H. C. Peterson, B. H. Powell, Sr., D. R. Powell, G. H. Rohrbacher, M. H. Smyth.

Finance Committee—H. S. Chapman, J. V. Craviotto; J. D. Dameron, S. E. Latta, B. J. Powell, Sr., D. R. Powell.

Program Committee—William Friedberger, Samuel Hanson, B. J. Powell, Jr., G. H. Sanderson, Hudson Smythe, T. L. Sutton.

Delegates—P. B. Gallegos, H. E. Kaplan, D. R. Powell, G. H. Sanderson.

Alternates—C. A. Broaddus, J. F. Doughty, R. T. McGurk, C. V. Thompson.

There being no further business the scientific program was opened by Dr. Rodney A. Yoell of San Francisco with a paper on *Medical Economics.* The discussion took the form of questions led by Doctors Sanderson, Dewey Powell, Latta, and Griner.

Dr. Alson R. Kilgore was present among the guests, but had not prepared any message.

After some discussion of the cumbersome nomination and election rules of the By-Laws, it was moved by Dr. D. R. Powell that a committee be appointed to revise the procedure. This was duly seconded, and carried. C. A. Broaddus, *Secretary.*

⁂

SONOMA COUNTY

The regular monthly meeting of the Sonoma County Medical Society was held at the Occidental Hotel on October 9 at 7 p. m. In the absence of the president, Dr. S. S. Bogle occupied the chair.

The following guests and members were present: S. Z. Peoples, S. S. Bogle, Chesley Bush, C. J. Schmelz, Chester Marsh, C. M. Carlson, Ernest Nieira, C. B. Andrews, F. O. Butler, D. C. Oakleaf, Kathleen Morris, Herbert Honor, L. W. Hines, E. T. Noall, B. L. Baldwin, P. V. Konttas, W. C. Shipley, Irene Carlson of the California Tuberculosis Association.

Several communications were read and placed on file.

Preceding the evening meeting a clinic upon the subject of *Tuberculosis,* under the direction of Dr. Chesley Bush of the Alameda County Tuberculosis Hospital at Livermore, was held in the office of Doctors Shipley, Mahan, and Hines at 533 Mendocino Avenue, Santa Rosa, beginning at 2 p. m. Twenty-nine patients, from all parts of the county, were examined. Their x-ray, history records, and laboratory findings had all been prepared in advance. Seven of these patients were found to have active tuberculosis; eleven of them were considered suspicious, although no definite evidence of tuberculosis existed; and the remaining eleven patients were absolutely clear, having only slight respiratory or sinus infections, which accounted for their symptoms.

Those present were deeply interested in Doctor Bush's careful examinations of patients and interpretations of the roentgenograms. The afternoon was well and profitably spent.

Following the business meeting, Doctor Bush was again introduced and he delivered a very interesting talk on *Tuberculosis,* illustrated by lantern slides. It was a pleasure to listen to Doctor Bush, as he is evidently thoroughly conversant with his subject and able to impart his knowledge to his listeners.

Doctor Bogle thanked Doctor Bush for coming to the meeting, and expressed appreciation for the help given. A rising vote of thanks was then tended Doctor Bush.

The secretary announced that the December meeting would be the annual business meeting, report of officers, and election of officers for the ensuing year.
W. C. Shipley, *Secretary.*

⁂

VENTURA COUNTY

The monthly meeting of the Ventura County Medical Society was held in the Clinic Building of the Ventura County Hospital on October 10. The meeting was called to order at 8 p. m. by Dr. F. Royal Hendricks. Sixteen members and seven guests attended the meeting.

Doctor Ullmann of Santa Barbara, introduced as the speaker of the evening, gave a talk on the Alameda hospital plan. His talk was followed by a discussion by Doctors Henderson and Sheldon, members of the Public Relations Committee of Santa Barbara.

Following the program, communications were read.

The Public Relations Committee was instructed to write to Doctor Dickie for the hospital plan of the Alameda County Medical Association.

Dr. W. S. Clark moved and Dr. Bardill seconded the motion, that the Public Relations Committee act on the hospital plan. The motion was carried.

Dr. Thair Rich's application for transfer from Los Angeles County to Ventura County was read. It was moved, seconded and carried, that Doctor Rich be elected a member.
William Felberbaum, *Secretary-Treasurer.*

CHANGES IN MEMBERSHIP

New Members (21)

Alameda County.—Donald Andrews Macfarlane, Frank E. Sawyer.

Contra Costa County.—Melvin Cooper Bolender, Claude Lamar Kerns.

Los Angeles County.—Robert V. Baker, Karel B. Blahnik, Florence May Dunlap, Edward Dorsey Ellis, E. Earll Kinzer, James J. O'Connor, M. W. Rosenberg, Carroll G. Simons, Albert James Supple, E. G. Louis Wiebusch.

San Diego County.—John Lee Farmer, Frederick F. Miller.

San Francisco County.—David Crise Cleave, Samuel R. Sherman, Charles Weiss.

Santa Clara County.—William E. Delphey, Hyman Tucker.

Transferred (3)

E. H. Benson, from Mendocino to Alameda County.

F. C. Ferry, from Orange to Los Angeles County.

Giuseppe Vercellini, from Fresno to Los Angeles County.

In Memoriam

Alexander, Ralph Lee. Died October 19, 1933, age 57. Graduate of University Medical College of Kansas City, 1903. Licensed in California in 1922. Doctor Alexander was a member of the Orange County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

✠

Braafladt, Louis Henry. Died November 10, 1933, age 48. Graduate of Rush Medical College, 1916. Doctor Braafladt was a member of the Sacramento Society for Medical Improvement, the California Medical Association, and the American Medical Association.

✠

Bryant, Ernest Albert. Died October 19, 1933, age 64. Graduate of the University of Pennsylvania School of Medicine, 1890. Licensed in California in 1891. Doctor Bryant was a member of the Los Angeles County Medical Association, the California Medical Association, and a Fellow of the American Medical Association.

✠

Costar, William James, Jr. Died October 25, 1933, age 34. Graduate of the University of California Medical School in 1927, and licensed in California the same year. Doctor Costar was a member of the Butte County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

✠

Edwards, William A. Died November 15, 1933, age 73. Graduate of the Pennsylvania School of Medicine, Philadelphia, 1881. Licensed in California in 1889. Doctor Edwards was an honorary member of the Los Angeles County Medical Association, the California Medical Association, and a Fellow of the American Medical Association.

✠

Gaynor, John Joseph. Died October 1, 1933, age 79. Graduate of the College of Physicians and Surgeons, 1881. Licensed in California in 1892. Doctor Gaynor was a member of the Santa Cruz County Medical Society, the California Medical Association, and the American Medical Association.

✠

Johnson, Carl. Died September 14, 1933, age 64. Graduate of the Denver College of Medicine, 1891. Licensed in California in 1912. Doctor Johnson was a member of the Los Angeles County Medical Association, the California Medical Association, and a Fellow of the American Medical Association.

✠

McElroy, Bernard F. Died November 7, 1933, age 61. Graduate of the University of California Medical School, 1899. Licensed in California in 1900. Doctor McElroy was a member of the San Francisco County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

✠

Oliver, Joseph A. Died October 17, 1933, age 71. Graduate of the University of California Medical School, San Francisco, 1889. Licensed in California in 1890. Doctor Oliver was a member of the San Francisco County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

Pope, Frederick Samuel. Died October 9, 1933, age 65. Graduate of the Medical Faculty of Trinity University, Toronto, 1898. Licensed in California the same year. Doctor Pope was a member of the Orange County Medical Society, the California Medical Association, and the American Medical Association.

✠

Talbot, William Thompson. Died November 9, 1933, age 52. Graduate of the College of Physicians and Surgeons, Los Angeles, 1918. Licensed in California the same year. Doctor Thompson was a member of the Imperial County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

OBITUARIES

Howard Augustus Gallup

1884-1933

By the sudden death of Dr. Howard Augustus Gallup from a coronary occlusion on October 9, the county of San Luis Obispo has lost one of its most valued physicians.

Doctor Gallup was born in Santa Clara on February 19, 1884. He was graduated from Cooper Medical College in 1911, and interned at the Santa Clara County Hospital. At El Segundo he practiced for two years, and at Arroyo Grande, San Luis Obispo County, four years. He moved to San Luis Obispo City in 1918, where he was associated with the late Doctor Stover. He acquired the San Luis Sanitarium in 1919, which he retained until his death.

Doctor Gallup was most active in civic affairs. As president of the local Chamber of Commerce, past president of the Rotary Club, and active worker in the cause of crippled children and member of the board of directors of the California Society for Crippled Children, he was a valued asset to the San Luis Obispo community. He was president of the San Luis Obispo County Fish and Game Association, and a director of the state organization; president, also, of the Guarantee Building and Loan Association of San Luis Obispo.

He was a member of the Benevolent and Protective Order of Elks, King David Lodge of Free and Accepted Masons, and a member of Al Malaikah Temple of the Shrine.

Doctor Gallup is survived by his widow, Maude Chase Gallup, and his son, Robert, nineteen years of age. A younger brother, Chester Gallup, resides in San Jose. A sister, Mrs. Eunice Anteureith, and his parents, Dr. and Mrs. T. E. Gallup, reside in Yreka.

Allen F. Gillihan.

Frederick Pope

1863-1933

Frederick S. Pope of Santa Ana died October 19, after a brief illness from cerebral hemorrhage, in St. Joseph Hospital, Orange. Although he had been a member of the Orange County Medical Association for only a few years, he had formed many friendships among the members and was much respected.

Doctor Pope was born in Cornwall, England, of English parentage, May 16, 1863. His parents were William Pope and Elizabeth Chenoweth Pope.

His preliminary education was had at English public schools, including the Plymouth Grammar School. In 1893 he married Elizabeth S. Stafford. Having removed to Canada, Doctor Pope studied medicine, and was graduated from Trinity University, Toronto, M. D. 1898. His California license was granted shortly thereafter.

For a while Doctor Pope practiced in Alberta, Canada, but kept in close touch with the land of his nativity. He received his M. R. C. S., England, in 1902, and the following year his L. R. C. P., London.

During the Great War he served for a time in the Royal Army Medical Corps, Fort Recasla, Malta.

In 1924 Dr. and Mrs. Pope located in Orange County, where Doctor Pope remained in active practice until his death. The doctor was an Episcopalian in church affiliation, and Republican in politics.

The sympathy of the members of the Orange County Medical Association is extended to Mrs. Pope in the loss of her husband.

C. M. A. DEPARTMENT OF PUBLIC RELATIONS*

Legislation Provides Reimbursement to Some Hospitals for Services to Indigents Injured in Automobile Accidents

Between $250,000 and $300,000 in state funds will be available during the next twelve months for distribution to some hospitals of the state as reimbursement for expenses incurred by such institutions for the care of indigent persons injured in motor-vehicle accidents, in accordance with the terms of legislation (House Bill No. 80), enacted by the ninetieth Ohio General Assembly, and which became effective October 9.

Only Ohio hospitals "organized and operated not for profit" will benefit under the Act, which was sponsored and promoted by the Ohio Hospital Association and introduced in the legislature by Representative S. A. Hesse, Cleveland. A considerable number of privately owned hospitals and institutions will be excluded from participation in the fund because of the "nonprofit" requirement of the Act.

The measure had a stormy career in the legislature and was not enacted until the closing moments of the session because of objections raised by some members of the General Assembly. At that time it was pointed out by some legislators that the Act discriminated between hospitals and that it provided for the use of a specific state fund designated for other purposes. Moreover, doubt was raised as to the fundamental policy of compensation for one particular type of injuries and as to the soundness of the policy of having the state finance such activities which are not strictly emergency poor relief activities.

To save the bill from defeat its backers consented to an amendment which limits its operation and effect until March 1, 1935.

Under the Act each hospital able to qualify under the terms of the Act will be entitled to reimbursement from the State Maintenance and Repair Fund, raised by the annual automobile license-tag fees, for the care of persons injured in motor-vehicle accidents who are unable to pay for hospitalization.

The sum to be taken from the Maintenance and Repair Fund for reimbursement to hospitals is allotted by setting aside 19 cents for each motor vehicle registered in the state for the years 1933, 1934, and 1935 prior to March 1, 1935.

Hospitals permitted to share in the fund will be paid on a *per diem* basis for the hospitalization of indigent victims of motor-vehicle accidents. The *per diem* rate is to be the same as the *per diem* amount paid to each hospital by the State Industrial Commission.

As defined in the Act, an "indigent person is one who has suffered a motor-vehicle injury, is received and cared for in a hospital, is unable to pay for the cost of such care and whose account, therefore, remains unpaid at the expiration of ninety days after the termination of such care."

The Act excludes an employee suffering from a motor-vehicle injury with respect to which he is entitled to the benefits of the Workmen's Compensation Act. A person injured by the operation of a motor vehicle is deemed unable to pay hospital charges if it appears that, should an action be brought and judgment secured for the payment of the hospital bill against him or against any other person legally responsible for his care, execution thereon is unavailing.

The State Registrar of Motor Vehicles is charged with administration of the Act and with approval and payment of claims filed by hospitals. Hospitals entitled to the benefits of the Act and desiring to take advantage of it are required to make, monthly, detailed reports to the registrar, setting forth all the facts in the case for which payment is requested. If the registrar of motor vehicles disapproves any claim, the claimant hospital is entitled to a hearing before him to press its claim. The decision of the registrar in all claims is final.

In case a patient for whom a hospital has been reimbursed by the registrar should become able to pay for his hospitalization, the hospital is expected to collect from him the amount of his hospital bill. Should the amount of the bill be collected, the registrar of motor vehicles is authorized to deduct such amount from future claims submitted by the hospital. In event reimbursement to the state cannot be collected in this manner, the Act authorizes suit against the hospital by the Attorney-General.—*Ohio State Journal,* November, 1933.

* * *

Court Ruling on Fee Splitting

Considerable publicity has been given to a novel case recently decided in the Surrogate's Court of New York County, New York, in which the division of fees by physicians was involved. The case arose from a provision in the will of the late Henry Sterne which established trusts for the benefit of the Montefiore Hospital and the Hospital for Joint Diseases, New York City, but provided that, to become eligible, the two institutions must "make a binding rule to the effect that any and all physicians at any time practicing for remuneration in the said respective institutions shall be required to and shall pay toward the maintenance and support of the said institution a sum of money equal to 10 per cent of the gross fees which shall at any time be received by such physicians, respectively, for services performed by them in the said institutions."

A protest against this provision of the will was filed in the Surrogate's Court by the two hospitals, the petition stating that the condition imposed upon them a rule of conduct which was in violation of public policy, compelled the division of fees by physicians and would impair the efficiency of the hospital.

---

* An open forum for progress notes on the department's activities, and for brief discussions on medical economics. Correspondence and suggestions invited. Address Walter M. Dickie, Room 2039, Four Fifty Sutter Street, San Francisco. This column is conducted by the Director of the Department.

In deciding the case in favor of the hospitals and striking the provision from the will, the court declared:

"It is immaterial whether the division of medical fees occurs between a physician or a layman, or a physician and a physician in cases prohibited by the canons of ethics, or, as in the situation here, between a physician and a hospital. Inevitably such a method of division would lead to deterioration in the medical staffs of hospitals with attendant injury to the public. It would likewise subject some physicians to the temptation of overcharging their patients to meet the requirements of the hospital rule.

"Although the difficulty in enforcing the condition might not of itself be a ground for a determination of invalidity, where, as here, it is mingled with a requirement that is unreasonable, unethical, and in violation of public policy, the court cannot sustain it."

This attitude of the New York court is encouraging. It is possible it may blaze the trail for similar settlements of bad situations elsewhere, where division of fees is not necessarily involved, but where commercialized ventures in supplying medical services are flourishing.

It may become necessary for those familiar with the dangers of many medical and hospital service schemes to turn to the court to protect the public. It is easy to imagine the short work which could be made of some medical rackets were the projects taken to court for judgment on their merits in the light of public policy and public benefits.—*Ohio State Medical Journal,* November, 1933.

THE WOMAN'S AUXILIARY TO THE CALIFORNIA MEDICAL ASSOCIATION*

Component County Auxiliaries

Alameda County.—Last year the members of the Woman's Auxiliary to the Alameda County Medical Association started something. They invited their husbands to a party. Quite evidently the husbands liked it, for this year, when they were asked to a dinner party on October 20, they all wanted to come. The large dining-hall of the Women's Athletic Club was well filled.

Mrs. Charles E. Dukes, president of the auxiliary, spoke a few cordial words of welcome and introduced the guests of honor, Dr. George Reinle, president of the State Medical Association, and Mrs. Reinle, whose presence added greatly to the importance and pleasure of the occasion.

Unfortunately, Dr. Dexter Richards, president of the County Medical Association, was unable to attend, and Mrs. Richards had to endure the evening as a widow. Dr. Frank Baxter, president-elect of that organization, made himself famous as the author of a speech, which might be called *The Exploitation of Madame X.*

A series of clever dramatic readings was presented by Miss Dorothy Crawford, of national broadcasting fame. Mrs. William H. Sargent led the whole group in singing some medical renditions of old songs with most entertaining results. Many guests remained for cards later in the evening.

Undeniably the party was a complete success. There is no question about that. But there are rumors of a question. Has anyone been asked, "Who gave that party?"

Los Angeles County.—The regular meeting of the Woman's Auxiliary to the Los Angeles County Medical Association was held October 17 at the Ebell Club Solarium, with Mrs. A. Bennett Cooke presiding. Luncheon was served at 12:30, followed by a short business meeting.

The program was given by Dr. E. S. Remmen, who spoke on *Changing Conditions in Medical Practice.* Dr. Harry Wilson spoke on *How Shall These Changing Conditions Be Met,* comparing many of the old methods of care, still used by the uninformed, to the new.

Current Events—*The New County Hospital* was given by Mr. O. W. Olsen, assistant superintendent of the Los Angeles County Hospital.

* * *

Sacramento County.—The regular meeting of the Woman's Auxiliary to the Sacramento Society for Medical Improvement was held on Tuesday evening, October 17, at the home of Mrs. J. B. Harris. About seventy members and guests were present. A short business meeting was held, with the president, Mrs. F. N. Scatena, presiding. It was voted to give $10 to the Community Chest, $10 to the Sacramento Orphanage, and $5 to the "Little House," a home for girls who are too old for the orphanage and too young for the Y. W. C. A. Two new members were announced: Mrs. Joseph L. Mullen of Sacramento and Mrs. L. B. Barnes of Newcastle. Mrs. George Foster was named chairman of the Nominating Committee, and Mrs. H. J. Davis was nominated from the floor, Mrs. Foster from the executive board, the third member to be selected by the two named. The announcement was made that the next meeting would be held on the third Tuesday of November at the home of Mrs. Burt Howard and no cards will be sent out.

After the business meeting, musical selections were given by Mrs. George Iki, accompanied by Mrs. Eugene Pitts, and by Mrs. Herman Lehne, accompanied by Mrs. George Popert. Miss Cornelia Provines, Sacramento County Librarian, reviewed three books in a most entertaining manner.

The program was followed by a social hour, and refreshments were served by the hostess, assisted by Mesdames J. Roy Jones, George Iki, Nathan Hale, and Bert Thomas. Everyone present declared it was one of the most successful and enjoyable meetings the auxiliary has ever held.

On Monday, October 23, our president, Mrs. Scatena, left for Chicago to be present on October 30 at the all-day meeting of the Chairmen of the National Women's Crusade, called by Mrs. Franklin Roosevelt. As auxiliary president here, Mrs. Scatena was named chairman in this district and sponsored the meeting at which Dr. Aurelia Henry Reinhardt spoke here in Sacramento. At the meeting in Chicago of the National Women's Committee, the speakers will be Mrs. Roosevelt, Mr. Newton Baker, and Miss Jane Addams.

(Mrs.) F. P. Brendel,
Corresponding Secretary.

* * *

San Diego County.—The Woman's Auxiliary to the San Diego County Medical Society met on October 10. The members present regretted that the president, Mrs. Charles E. Howard, could not be with us on account of illness.

The Nominating Committee, to report a slate of officers at the November meeting, was appointed. A proposed amendment including the words "adult granddaughters" in the membership, making our local constitution correspond with the state's, was read. A formal vote favoring the adoption of a project cooperating with the Crippled Children's Society of San Diego in its work with infantile paralysis was made.

Interesting bits of current events were given by one member, and the book "Devils, Drugs, and Doctors" was delightfully reviewed by another member, as the main part of the program.

(Mrs.) Harriet L. Colby, *Secretary.*

---

* As county auxiliaries to the Woman's Auxiliary to the California Medical Association are formed, the names of their officers should be forwarded to Mrs. Thomas J. Clark, chairman of the Publicity and Publications Committee, 40 Ross Circle, Oakland. Brief reports of county auxiliary meetings will be welcomed by Mrs. Clark and must be sent to her before publication takes place in this column. For lists of state and county officers, see advertising page 6. The Council of the California Medical Association has instructed the editor to allocate one page in every issue for Woman's Auxiliary notes.

Santa Barbara County.—Twenty-one members and guests were entertained by the new president of the Woman's Auxiliary to the Santa Barbara County Medical Society, Mrs. John Van Paing, at her home 1334 Alameda Padre Serra on Friday afternoon, October 20.

There were tables of bridge, followed by a short business session, Mrs. Van Paing presiding. The minutes of the last meeting were read and approved. Mrs. Wilcox reported placing a subscription to *Hygeia* with the library of the new recreation rooms, as a gift from the auxiliary. A letter of resignation from Mrs. Atsatt was read. Mrs. Stevens moved to accept Mrs. Atsatt's resignation and to have the secretary write her a letter expressing our sincere regrets in so doing. Mrs. Friedell seconded the motion.

The president requested those present to offer suggestions for a benefit, to take place in the near future, whereby we may secure funds for our nurses' awards. Mrs. Van Paing named Mesdames Wilcox, Profant, and Hambach as a committee to arrange a card party.

After the meeting adjourned, a very lovely tea was served by the hostess, with Mrs. Brown and Mrs. Bakewell presiding.

MABEL HUNT, *Secretary.*

Proposed Amendments to the Constitution of the Woman's Auxiliary to the California Medical Association*

ARTICLE III

Members

Section 1. Change to read:

(a) *The membership of this Auxiliary shall consist of women members—active, associate, and honorary.*

(b) *Active membership shall consist of women members in good standing in the component county auxiliaries.*

(c) *Associate membership shall consist of women who are wives of interns, wives of members of the United States Army and Navy Medical Corps.*

(d) *Honorary membership may be conferred only by the Board upon those women to whom a particular tribute is deemed desirable.*

Add:

Section 2. (b) *Women otherwise eligible to membership whose husbands practice any art of healing not recognized by the medical profession, shall forfeit all membership privilege.*

ARTICLE V

Board of Directors

Section 1. Insert after the word "Constitution" on second line, *together with the chairmen of standing committees.*

Section 3. Add as paragraph (c) under this section:

All County Presidents shall be eligible to attend Board meetings and shall receive written notices of same. They shall have voice but no vote in the proceedings.

ARTICLE VII

Duties of Officers

Section 2. Add to end of this paragraph:

It shall be her duty to encourage active organization of County Auxiliaries throughout the State.

Section 3. Change the word "Program" to *Health Education.* And add to this section: *It shall be her duty to outline suggested programs and to assist County Program Chairmen in developing programs suited to their needs.*

Section 4. Change to read:

The Recording Secretary shall record the minutes of all meetings and shall perform such other duties as are *outlined in the Handbook.*

Section 5. Add to this section:

She shall present at the annual meeting a report duly audited by a professional accountant.

Section 6. Add as paragraph:

(b) *The Corresponding Secretary shall be Chairman of Credentials and Registration.*

Add as paragraph:

(c) *It shall be the duty of the Corresponding Secretary to send to the National President, immediately following the annual meeting, twelve copies of the list of newly elected officers and members of the State Board.*

Add as:

Section 9. *All duties of all officers as outlined herein shall be amplified according to "Duties of Officers" in Handbook for State Auxiliaries.*

ARTICLE VIII

Standing Committees

Section 1. Change to read:

The Auxiliary shall carry on its major activities through the following Standing Committees, *the Chairmen of which (unless otherwise provided for in the Constitution) shall be appointed by the President.*

Membership and Organization
Health Education
Finance
Public Relations
Public Health Activities
Editor and Publicity
Hygeia
Convention

Section 2. Change to read:

Each Standing Committee shall consist of at least three members, the Chairman of which shall be a member of the Board of Directors, *the other members to be appointed by the President and Chairman, and ratified by the Board.*

Section 3. Change to read:

(a) *The duties of the Committee on Membership and Organization shall be as outlined in Article VII, Section 2.*

(b) *The duties of the Committee on Health Education shall be as outlined in Article VII, Section 3.*

(c) *The Finance Committee shall consist of three members, the Chairman (appointed by the President), the Treasurer, and the retiring Treasurer. This committee shall prepare the annual budget and present same to the Board for its approval at the pre-convention meeting, before final submission to the House of Delegates.*

(d) *The Committee on Public Relations shall be the liaison between the Auxiliary and all other organizations. This committee shall foster and encourage all matters looking to the advancement of medical science.*

(e) *The Committee on Public Health Activities shall seek information concerning all Public Health Activities with a view toward coöperating in the promotion of acceptable health measures.*

(f) *Editor and Publicity: It shall be the duty of this committee to edit the Auxiliary department in "California and Western Medicine," and to file all suitable material for the Archives. This committee shall prepare all public notices and articles for the press and shall send duplicate*

---

* Article from present Constitution covering amendments.

ARTICLE XV

Amendments

This Constitution may be amended at any regular annual meeting of this Auxiliary by a two-thirds vote of the members of the House of Delegates present and voting, provided a copy of the proposed amendment shall have been mailed to each member of the Board of Directors and to the Secretary of each county auxiliary at least sixty (60) days prior to the date of said meeting; and provided further that said amendment shall have been published at least once in CALIFORNIA AND WESTERN MEDICINE at least three months prior to the adoption thereof; and provided, finally, that such amendment shall, prior to adoption thereof, have been approved by the Council of the California Medical Association evidenced by resolution thereof.

copies of all outstanding items of interest to the National Publicity Chairman. This committee shall be the custodian of the State Scrap Book and shall prepare all State and National exhibits of same.

(g) *The Hygeia Committee shall be responsible for subscriptions to "Hygeia" magazine, and shall coöperate in the program outlined by the National "Hygeia" Chairman.*

(h) *The Convention Committee shall be responsible for the details of convention entertainment and program, and shall work in conjunction with the President in all plans. This committee shall prepare and present for approval at the February meeting of the Board a tentative program for the annual meeting. This committee shall also be responsible for all pre-convention publicity.*

ARTICLE IX

Nominations and Elections

Section 3. Add as paragraph:

(b) *If, through lack of proper representation of a district at the annual meeting there is a vacancy in the councilorship, this vacancy shall be filled by the Board at its first meeting.*

Add as paragraph:

(c) *When only one delegate is present to represent a district, she shall be nominated District Councilor.*

ARTICLE X

Delegates

Section 4. Change to read:

The Board of Directors of each County Auxiliary shall elect its delegates and alternates, *and forward list of same to State Treasurer.* Each County Auxiliary secretary shall *distribute the proper credential cards which shall have been issued by the State Corresponding Secretary,* to both delegates and alternates, *and shall return the duplicates, properly signed,* to the State Corresponding Secretary.

Add as

Section 5. *Vacancies occurring in any county delegation may be filled by the chairman of said delegation.*

Section 5, as it now stands, to be known as Section 6.

Section 6, as it now stands, to be known as Section 7.

ARTICLE XI

Meetings

Insert as

Section 4. *The registration fee for members at the annual meeting shall be one dollar each member.*

Section 4. This section as it now stands, to be known as Section 5.

ARTICLE XII

Dues

Section 3. Omit.

ARTICLE XIII

County Auxiliaries

Section 3. Change to read:

The wives and mothers, adult sisters, adult daughters *and adult granddaughters,* and the widows of members in good standing of a county medical society (active, associate or honorary) only shall be eligible to membership in the county auxiliary. Women having the degree of M. D. or a degree for any art of healing, or whose husbands practice any art of healing not recognized by the State Medical Association, shall be ineligible to membership.

Section 8. (b) Change to read:

The fiscal year of all county auxiliaries shall correspond *to the calendar year.*

Section 9. Change to read:

Names of all delegates and alternates shall be filed in the office of the *Treasurer* of the State Auxiliary *thirty* days prior to the annual meeting. *The name of the chairman of the delegation shall be indicated.*

Section 11. Add as paragraph:

(b) *Immediately following each annual election, the Corresponding Secretary shall forward two copies of the list of newly elected officers to the State President.*

NEVADA STATE MEDICAL ASSOCIATION

D. A. SMITH, Mina	President
E. E. HAMER, Carson City	President-Elect
J. N. VAN METER, Las Vegas	First Vice-President
W. H. FROLICH, East Ely	Second Vice-President
HORACE J. BROWN, Reno	Secretary-Treasurer

COMPONENT COUNTY MEDICAL SOCIETIES

CLARK COUNTY

On November 14 the Clark County Medical Society was entertained by Dr. R. O. Scofield, with dinner at the Boulder City Hospital, and who then presented a series of fracture cases then under treatment.

Fractures of the humerus and scapula, accompanied by dislocation of the humerus; compound comminuted fractures of the leg; fractures of the os calcis and fractures of the metacarpals, to a total of about forty cases, were presented and discussed.

Dr. F. M. Ferguson gave a short talk on Doctor Hertzler and his work at the Halstead Hospital.

J. N. Van Meter, *Secretary.*

⁂

WASHOE COUNTY

The Washoe County Medical Society held its regular monthly meeting in the State Building, Tuesday evening, November 14, Dr. Da Costa presiding.

The society moved to reverse the usual order of proceedings by calling upon Dr. F. M. Pottenger of Monrovia, California. Doctor Pottenger came to Reno under the direction of the California Tuberculosis Association, and was sponsored by the Nevada Public Health Association and the Washoe County Medical Society. The subject of Doctor Pottenger's address was a general review of the treatment of tuberculosis for the past sixty years. The foundation for scientific treatment really did not begin till the discovery of the tubercle bacillus by Robert Koch in 1882. Since the cause of the disease was known, the attention of the medical profession has been directed as much to the prevention of the disease as toward its cure. Organized scientific effort has not only materially lessened the death rate, but provided a much more hopeful outlook for the tuberculous patient. Today the outlook for the tuberculous patient, coupled with hygienic surroundings, becomes the great hope for both patient and profession. The public health slogan should be early recognition of the disease. This should consist in well-organized clinics where every school child should be regularly examined by all the diagnostic means at the command of the profession.

The whole field of mental and physical therapeutics was so thoroughly covered by the speaker that the audience could have listened as long as he would care to talk. So we say, appreciatively, "Come again, Doctor Pottenger."

The society then resumed its routine work and upon conclusion adjourned.

Thomas W. Bath, *Secretary.*

The great characteristic of any living thing, the final distinction between a living thing and a dead thing, is the ability which the living thing has to adjust itself to its surroundings. For instance, a dead thing, a stone or a corpse, in the Arctic becomes chilled clear through; in the tropics becomes heated clear through; it is at the mercy of its surroundings. But a living man shows an unchanged internal temperature, whether he be exposed to Arctic or tropic, summer or winter, so long as he is alive and well—*i. e.*, so long as he can adjust himself to his surroundings. That is what "alive and well" means. Health is "successful adjustment, without pain or damage."—H. W. Hill, M. D.

MISCELLANY

Under this department are ordinarily grouped: News; Medical Economics; Correspondence; Twenty-five Years Ago column; Department of Public Health; California Board of Medical Examiners; and other columns as occasion may warrant. Items for the News column must be furnished by the fifteenth of the preceding month. For Book Reviews, see index on the front cover, under Miscellany.

NEWS

Coming Meetings.

American Medical Association, Cleveland, Ohio, June 11 to 15, 1934. Olin West, M. D., Secretary, 535 North Dearborn Street, Chicago, Illinois.

California Medical Association, Riverside, April 30 to May 3, 1934. Emma W. Pope, M. D., Secretary, 2004 Four Fifty Sutter, San Francisco.

Southwestern Medical and Surgical Association, El Paso, Texas, December 7 to 9, 1933. John L. Murphy, M. D., Member Committee on Publicity, 404 Robert Banner Building, El Paso, Texas.

Western Surgical Association, Cincinnati, December 8 to 9, 1933. Frank R. Teachenor, M. D., Secretary, 306 East Twelfth Street, Kansas City, Missouri.

Medical Broadcasts.*

American Medical Association Health Talks.—The American Medical Association broadcasts on Tuesdays and Thursdays from 8:55 to 9 a. m., Central Standard Time, over Station WBBM (770 kilocycles, or 389.4 meters).

There is also a fifteen-minute talk, sponsored by the Association, on Saturday mornings from 9:45 to 10 o'clock, Central Standard Time, over Station WBBM.

* * *

San Francisco County Medical Society.—The San Francisco County Medical Society broadcast program for the month of December is as follows:

Tuesday, December 5—KJBS, 11:15 a. m., and KFRC, 1:35 p. m. Subject: What You Should Know About Tuberculosis.

Tuesday, December 12—KJBS, 11:15 a. m., and KFRC, 1:35 p. m. Subject: Questions and Answers About Tuberculosis.

Tuesday, December 19—KJBS, 11:15 a. m., and KFRC, 1:35 p. m. Subject: How Collapsing the Lung Cures Patients of Tuberculosis.

Tuesday, December 26—KJBS, 11:15 a. m., and KFRC, 1:35 p. m. Subject: The Humanity of Vivisection.

* * *

Los Angeles County Medical Association.—The radio broadcast program for the Los Angeles County Medical Association for the month of December is as follows:

Tuesday, December 5—KECA, 9:30 a. m. Subject: That Tired Feeling.

Friday, December 8—KFAC, 9:15 a. m. Subject: Your Doctor and You.

Saturday, December 9—KFI, 9:15 a. m. Subject: That Tired Feeling.

Tuesday, December 12—KECA, 9:30 a. m. Subject: The Child's Appetite.

Friday, December 15—KFAC, 9:15 a. m. Subject: Your Doctor and You.

Saturday, December 16—KFI, 9:15 a. m. Subject: The Child's Appetite.

Tuesday, December 19—KECA, 9:30 a. m. Subject: Children's Nutrition.

Friday, December 22—KFAC, 9:15 a. m. Subject: Your Doctor and You.

Saturday, December 23—KFI, 9:15 a. m. Subject: Children's Nutrition.

Tuesday, December 26—KECA, 9:30 a. m. Subject: Modern Miracles.

Friday, December 29—KFAC, 9:15 a. m. Subject: Your Doctor and You.

Saturday, December 30—KFI, 9:15 a. m. Subject: Modern Miracles.

Herzstein Lectures.—Stanford University and the University of California take pleasure in announcing the fourth course of the Morris Herzstein Lectures to be given by Herbert M. Evans, M. D., professor of anatomy, and Morris Herzstein, professor of biology and director of the Institute of Experimental Biology of the University of California. Under the provisions of the will of the late Dr. Morris Herzstein of San Francisco, these lectures are held in San Francisco under the auspices of the two universities.

Doctor Evans will speak on "The Internal Secretions of the Anterior Lobe of the Pituitary Body," and his lectures will be illustrated. They will be held at the San Francisco County Medical Society, 2180 Washington Street, San Francisco, on the following dates: Monday, January 29, 8:15 p. m.; Wednesday, January 31, 8:15 p. m.; and Friday, February 2, 8:15 p. m.

Members of the medical profession, including practitioners and medical students and other interested persons are cordially invited to attend. The lectures are open to the public as well as to the medical profession.

Los Angeles County Heart Association.—Clinical lectures were given on Thursday evening, December 7, and Friday morning and afternoon, December 8.

The Thursday evening lecture was a joint meeting with the Los Angeles County Medical Association.

The topics discussed were as follows:

The Importance of an Etiological Diagnosis in Heart Disease. By E. Richmond Ware, M. D., Los Angeles.

The Mechanism of the Heart Beat and Electrocardiography (moving picture). By R. Manning Clarke, M. D., Los Angeles.

The Use of Tissue Extracts in Angina Pectoris and Spastic Arterial Disease. By Franklin R. Nuzum, M. D., Santa Barbara.

Some Observations on Congenital Heart Disease. By Phillip E. Rothman, M. D., Los Angeles.

The Adolescent Heart. By Henry H. Lissner, M.D., Los Angeles.

The Determination of Arrhythmias Without Instrumental Aid (Methods?). By Donald J. Frick, M. D., Los Angeles.

Syphilitic Heart Disease. By Burrell O. Raulston, M. D., Los Angeles.

Heart Bogies. By John C. Ruddock, M. D., Los Angeles.

The Heart in Diabetes. By Howard F. West, M. D., Los Angeles.

---

* County societies giving medical broadcasts are requested to send information as soon as arranged (giving station, day, date and hour, and subject) to California and Western Medicine, 450 Sutter Street, San Francisco, for inclusion in this column.

The Failing Heart of Middle Life. By Robert W. Langley, M. D., Los Angeles.

Subacute Bacterial Endocarditis. By William H. Leake, M. D., Los Angeles.

The Heart in Hypertensive Disease. By Arthur Stanley Granger, M. D., Los Angeles.

Southwestern Medical and Surgical Association.—The Southwestern Medical and Surgical Association held its annual meeting at El Paso, Texas, December 7, 8, and 9. The first day was entirely devoted to allergy, the second to tuberculosis, and the third to goiter.

American Association for the Study of Goiter.—The American Association for the Study of Goiter, for the fifth time, offers $300 as a first award, and two honorable mentions for the best essays based upon original research work on any phase of goiter presented at their annual meeting in Cleveland, Ohio, June 7, 8, and 9, 1934. It is hoped this will stimulate valuable research work, especially in regard to the basic cause of goiter.

Competing manuscripts must be in English, and submitted to the corresponding secretary, J. R. Yung, M. D., 670 Cherry Street, Terre Haute, Indiana, not later than April 1, 1934. Manuscripts received after this date will be held for the next year or returned at the author's request.

The first award of the Memphis, Tennessee, 1933 meeting was given Anne B. Heyman, A. B., M. S., University of Michigan, Ann Arbor, Michigan, "The Bacteriology of Goiter and the Production of Thyroid Hyperplasia in Rabbits on a Special Diet."

Honorable mentions were awarded J. Lerman, M.D., and W. T. Salter, M. D., Huntington Memorial Hospital, Boston, Massachusetts, "The Calorigenic Action of Thyroid and Some of Its Active Constituents." Prof. Dr. Stefan Konsuloff, Sofia, Bulgaria, "Experimental Studies on Etiology of Goiter."

American Medical Association Scientific Exhibit at Cleveland.—Application blanks are now available for space in the scientific exhibit at the Cleveland session of the American Medical Association, June 11 to 15, 1934. The Committee on Scientific Exhibit requires that all applicants fill out the regular application form, and requests that this be done as early as convenient. The final date for filing applications is February 26, 1934. Persons desiring to receive application blanks should address a request to the Director, Scientific Exhibit, American Medical Association, 535 North Dearborn Street, Chicago, Illinois.

The First Course in Race Hygiene.—In August the first course in race hygiene for physicians was organized at the University of Halle. More than five hundred physicians, about one-third of all the physicians in that area, are taking the course. At the end of one or two years, the government medical commissar has announced, all physicians of Germany will be required to furnish evidence that they have taken such a course. In Saxony a law to that effect has already been enacted; Prussia and the remaining German *länder* will soon follow. Privatdozent Kürten, the director of the course, called attention in his introductory lecture to the trail blazed by America in the field of race hygiene. Measures that scientists of all countries have long since demanded but that have never been carried out, Germany will now make a reality. The course as organized consists of: introduction to ethnology, theory of hereditary transmission in man, race hygiene and the recent legislative enactments in Germany in this field.—*Journal of the American Medical Association,* Vol. 101, No. 12.

CORRESPONDENCE

Subject of following letter: A communication from the California Director of Public Health on the retirement of President John H. Graves from the California State Board of Health.

To the Editor:—At the meeting of the California State Board of Health held at San Francisco on November 4, 1933, Dr. John H. Graves, who had submitted his resignation as a member of the State Board of Health to Governor James Rolph, introduced his successor, Dr. Hubert Morrow of the University of California. After Doctor Morrow had been inducted into office as a member, the Board elected Doctor Morrow president.

The attached resolutions were passed by a standing vote of the members to express their appreciation of the services rendered by Doctor Graves as president of the California State Board of Health during the last eighteen months.

Very truly,

Giles S. Porter, *Director.*

* * *

RESOLUTIONS

Whereas, Because of other official and professional responsibilities, Dr. John H. Graves of San Francisco has seen fit to submit his resignation as a member of the Board of Public Health of the State of California to his Excellency, Governor James Rolph, Jr.; and

Whereas, During his term of service as a member and as president of the State Board of Public Health, he has given faithful and most efficient service to the state, and has been responsible for constructive changes in administration that should work in large measure to the best interests of the public health; now, therefore, be it

Resolved, That the Board of Public Health of the State of California, in regular session assembled at San Francisco on November 4, 1933, herewith expresses the appreciation of its members, individually and collectively, of the services which have been rendered by Dr. John H. Graves, for the excellent manner in which he has presided at the Board meetings, and for his efficient and loyal supervision of the administration of the policies and actions of this Board; and be it further

Resolved, That these resolutions be placed in the minutes, that a copy be printed in the "Bulletin of the California Board of Public Health," and that a copy be sent to the official journal of the California Medical Association.

Treatment of Tetanus.—Yodh briefly reviews 229 cases of tetanus, in the treatment of which antitoxin was used. Fourteen of these patients did not receive serum, of whom two with the disease in an extremely mild form recovered. The remaining cases were divided into two groups of 102 and 112. Patients in the group of 102 received an average dose of antitoxin of from 30,000 to 40,000 units intravenously and intramuscularly; 36 of these patients recovered and 66 died. In the group of 112 cases the antitoxin was administered intrathecally in the cisterna magna, as well as intravenously, intramuscularly, and subcutaneously; 59 patients recovered and 53 died. The author believes that the following facts have been established: (1) The use of tetanus antitoxin in the treatment of tetanus is perfectly rational, is absolutely necessary, and should be used early and in large doses. (2) The combined intrathecal (cistern puncture), intravenous and intramuscular method of administration is superior to all the others. It definitely lowers the mortality rate and ameliorates the symptoms far more than does treatment by the intravenous and intramuscular routes alone. (3) The administration of the antitoxin into the cisterna magna is preferable to the lumbar puncture, as the former is nearer the vital centers. This method quickly neutralizes any toxin that might be there and is much easier to perform. (4) The cistern puncture, properly performed, has no dangers. Not one fatality could be attributed to the administration of the antitoxin by that route directly in the group of 112 cases. If the needle is not pushed beyond 5.5 to 6 centimeters in adults there is no danger of puncturing the medulla. The author concludes that as the value of convalescent serum has been established in some infective conditions, it may be profitable to try its use in tetanus. Serum could be collected from convalescent patients and preserved for use in the place of the usual antitoxin.—*British Medical Journal.*

TWENTY-FIVE YEARS AGO*

EXCERPTS FROM OUR STATE MEDICAL JOURNAL

Vol. VI, No. 12, December, 1908

From Some Editorial Notes.

The End of the Year.—With this number your *Journal* ends the sixth year of its life. With this month, too, ends another year in the life of every one of us, for no matter when the birthday may come, we instinctively, as did the ancients, measure our years—that which man calls time—by the changes upon the great sun dial of nature. The six years that have passed have been very notable ones in American medical history. They have seen the reorganization of the entire medical profession of the United States. They have witnessed the growth and development of the American Medical Association to a point where it has become the largest and probably the most influential medical organization in the world. . . .

* * *

Hospital Abuses.—In his letter, Doctor Kreutzmann opens up the whole question of charity hospitals and hospital abuses. That there are always some people who will, and do, abuse every charity that has been or could be created, is well known. Every charity hospital that ever was run has at some time or other been abused by some people. . . .

From an article on "Opsonic Index and Vaccine Therapy" by Rene Bine, M.D., San Francisco.

For many years scientists have been trying to explain the phenomena of immunity. . . .

The object of this paper is to call attention to the results obtained by the use of bacterial vaccines, generally speaking, and to show why the technique of determining the opsonic index was destined, in its present form, to meet with disfavor.

Shasta County.

The Shasta County Medical Society met in regular quarterly session, with Dr. Thomas W. Huntington and Dr. Philip King Brown of San Francisco as guests. . . .

. . . Doctor Brown reviewed in a succinct manner the whole subject of goiter in its various forms and phases, using popular or technical terms as occasion demanded. He dwelt particularly upon the exophthalmic variety. He considered its treatment by the old-time remedies as useless or foolish; by the animal preparations as capricious and mostly disappointing; but he still had hopes in the newer serums. He maintained that surgical intervention offered the only assurance of relief. Doctor Huntington then spoke of the surgical treatment of exophthalmic goiter. . . .

Doctor Huntington's main object was to emphasize the importance of the conservation of the parathyroids, whose location, smallness, and independent blood supply placed them in jeopardy during the operation. . . .

Disease has been longer than any other of nature's forces misunderstood, fought against blindly, combated without real study. Scarcely seventy years ago did the first real glimmerings of what disease really is strike into the human mind in any practical way. Scarcely thirty years ago did the first real uses of that new knowledge begin to show themselves in remodeling human life.—H. W. Hill, M. D.

BOARD OF MEDICAL EXAMINERS OF THE STATE OF CALIFORNIA*

By Charles B. Pinkham, M. D.
Secretary-Treasurer

Results of Board of Medical Examiners' Examination, Sacramento. — Charles B. Pinkham, secretary-treasurer of the Board of Medical Examiners of the State of California, reports results of the written examination held in Sacramento, October 17 to 19, 1933. The examination covered nine subjects, and included ninety questions for physician and surgeon applicants. An average of 75 per cent is required to pass. An allowance of 1 per cent added to the general average is granted by the Medical Practice Act for each year of medical practice under a license granted elsewhere than in California, provided the applicant has not fallen below 60 per cent in more than one subject.

Forty applicants wrote the examination.

Thirty-five graduates of medical schools (87.5 per cent) passed, and five (12.5 per cent) failed.

The following colleges were represented:

PASSED

College	Year of Graduation	Per Cent
Baylor	1933	81 4/9
College of Medical Evangelists	1933	83 1/9 81 2/9; 87; 86 2/9; 85
Creighton	1933	85 8/9 81 3/9
Georgetown	1933	83
George Washington University	1933	78 8/9
Harvard	1932	85 3/9
	1933	86 3/9
McGill	1932	85 7/9
	1933	90
Northwestern	1933	89 1/9
Rush	1933	87 8/9 84 2/9 86 5/9; 85 2/9; 85 6/9
St. Louis University	1933	80 5/9 80 6/9
Stanford	1933	84 8/9 82 5/9
Temple	1932	78 6/9
	1933	85 1/9
Tulane	1932	80 2/9
University of California	1933	85
University of Charkov	1924	78 6/9
University of Illinois	1933	78 8/9
University of Michigan	1932	79 5/9 88 3/9
University of Nebraska	1932	90 2/9
University of Pennsylvania	1930	81 7/9
Vanderbilt	1929	87 3/9

FAILED

College	Year of Graduation	Per Cent
Chicago Medical School	1927	66 8/9
Hahnemann of Philadelphia	1902	58 1/9
Loyola	1915	62 3/9
Psycho-Neurological Institute, Russia	1917	72 2/9
University of Illinois	1931	72 1/9

* * *

The list of successful applicants follows:

James Francis Brady, Alameda, University of California Medical School.

Max Brannan, Repressa, Tulane University of Louisiana School of Medicine.

Lewis Thomas Bullock, San Francisco, University of Pennsylvania School of Medicine.

Francis Lester Crowley, Sacramento, Creighton University School of Medicine, Nebraska.

Dean James Darius, San Francisco, Creighton University School of Medicine, Nebraska.

Howard George Diesner, San Jose, University of Illinois College of Medicine.

Morton Spencer Havemann, Oakland, University of Michigan Medical School.

Rolla Burchard Hess, San Francisco, George Washington University Medical School, D. C.

---

* This column strives to mirror the work and aims of colleagues who bore the brunt of society work some twenty-five years ago. It is hoped that such presentation will be of interest to both old and new members.

* The office addresses of the California State Board of Medical Examiners are printed in the roster on advertising page 6.

(Continued on Page 17, Advertising Section)

Exclusively Engaged
in providing
Professional Protection

Thirty-four Years
of

Specialized
Service

The Medical Protective Company
of Fort Wayne, Ind.
WHEATON • ILLINOIS

Wishing You

A Merry Christmas

AND

A Happy and Prosperous New Year

IN this month it has for years been our custom to temper our efforts with consideration for the Yuletide comfort and happiness of others. We do prepare ourselves, however, for a more vigorous but always diplomatic campaign for our clients after the first of the New Year.

There can be no better time than during this slack season to clear your books of all doubtful accounts by listing them with the Bureau for immediate preparation for the New Year campaign.

The Doctors Business Bureau

ESTABLISHED 1916 • • EXCLUSIVELY FOR DOCTORS

310–319 Bank of America Building
GArfield 0460
SAN FRANCISCO

Sixth Floor, Spreckels Building
TRinity 1252
LOS ANGELES

OAKLAND SALT LAKE CITY

SOUTHERN SIERRAS SANATORIUM

SOUTHERN SIERRAS
SANATORIUM
BANNING, CALIFORNIA

For Tuberculosis and Allied Affections

Has established and maintained a reputation, both among physicians and patients, for service and satisfaction.

Doctor: Send your next patient here, and you may feel assured not only that he will receive maximum benefit from his sojourn, but he will be grateful and will thank you for sending him to

SOUTHERN SIERRAS
SANATORIUM

Red Cross and Government-Owned Cotton.—Volunteering as in days of the World War, an army of 600,000 Red Cross workers, devoted day after day to making into garments the textiles manufactured from 844,000 bales of government-owned cotton, voted by Congress for their relief. Because of this joint contribution one million school children were enabled to continue in school, and millions of men and women, our own fellow citizens, who, in most cases, had never before known the pinch of poverty, were kept warm and decently clad. All the work and expense of this gigantic clothing business were borne by the American Red Cross, which had been duly authorized by Congress to perform the task.

Life-Saving Courses by American Red Cross.—Forming a battle line against accidental death and injury stand a million men and women, and youth of both sexes who have qualified through their instruction in the Red Cross First Aid and Life-Saving courses for this useful service to their fellows. In actual figures 1,070,769 senior and junior certificates have been issued by the American Red Cross since the establishment of the service. Of these, 601,827 certificates were for first aid and 468,942 for proficiency in meeting the life-saving requirements.

Parrakeets Barred from Oregon.—The Oregon State Board of Health has issued an embargo against the importation of parrakeets into Oregon. The shipment of these birds into the state is prohibited until such time as it can be demonstrated that the aviaries from which parrakeets are shipped are free from infection. Following is the text of the resolution as adopted by the Oregon State Board of Health:

WHEREAS, Cases of psittacosis are appearing in western states due to the shipment of parrakeets from infected aviaries in California, and

CANYON SANATORIUM
REDWOOD CITY, CALIFORNIA

An Open Air Sanatorium for the Treatment of Tuberculosis and Diseases of the Chest.

NESTLED IN THE FOOTHILLS

For booklet giving full particulars write RALPH B. SCHEIER, M. D., *Medical Director*

San Francisco Office: 516 SUTTER STREET *Telephone* DOUGLAS 4486

Whereas, It is practically impossible to exclude carriers of this infection coming from infected areas, and

Whereas, Reservoirs of infection are known to exist in California, and

Whereas, Infected birds are continually coming from California and foreign ports; therefore be it

Resolved, That the State Board of Health of Oregon prohibit the shipment of parrakeets into this state until such time as it can be demonstrated that the aviaries from which parrakeets are shipped are free from infection.—*Weekly Bulletin, California Department of Public Health.*

Cocomalt in Convalescence.—Cocomalt suggests something new and interesting in the diet of the convalescent. It is so much more delicious than milk alone. Even those who dislike milk, refuse to drink it, welcome the refreshing, chocolate-like flavor of Cocomalt.

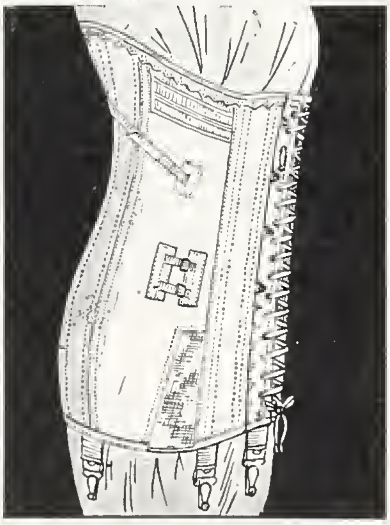
More important, however, is the fact that Cocomalt substantially increases the caloric value of milk. Prepared according to the simple label directions, Cocomalt adds 70 per cent more food-energy value to milk; so that every cup or glass a patient drinks is equal in caloric value to almost two cups or glasses of milk alone.

Being both palatable and digestible, Cocomalt is tolerated even by the sick. It is ideal in prolonged illnesses when the weakened digestive system is able to cope only with the most easily digested, readily assimilated liquid foods.

Deafness in the United States.—Ten million Americans are deafened—and the other 110,000,000 cannot hear 100 per cent either! Scientists explain that all of us are deaf to certain sounds.

(Continued on Next Page)

Surgical Corsets



Custom-made to order for hard to control cases

Also made to lace in back. Pads can be used with either.

Difficult cases of curvature, lordosis, faulty posture, or general viceroptosis, are frequently greatly aided by a specially designed and properly supporting corset. Our work is under the personal supervision of an experienced specialist. Prompt service.

460 POST ST. 1115 MARKET ST.

MArket 4244

HITTENBERGER

PROTECTION!

There is no guesswork in our prescription service. The ℞ is *exactly* as specified, or it is rejected. Rigid inspection after each operation restricts manufacturing variations within the lowest possible limits, and guards against the occasional error of the human element.

Genuine Bausch & Lomb lenses, expert craftsmanship, and strict inspection form a three-fold barrier for your protection.

RIGGS OPTICAL COMPANY

Established in Sixty Western Cities

ASSOCIATED OPTICAL COMPANY

LOS ANGELES SAN DIEGO PHOENIX LONG BEACH SANTA ANA

THE SAN FRANCISCO BANK

SAVINGS COMMERCIAL TRUST

INCORPORATED FEBRUARY 10TH, 1868

One of the Oldest Banks in California, the Assets of which have never been increased by mergers or consolidations with other Banks.

MEMBER ASSOCIATED SAVINGS BANKS OF SAN FRANCISCO

526 California Street, San Francisco, Cal.

June 30th, 1933

Assets	**$159,206,708.91**
Capital, Reserve and Contingent Funds	**$6,500,000.00**

The following accounts stand on the Books at **$1.00** *each, viz.:*

Bank Buildings and Lots	(Value over **$2,100,000.00**)
Other Real Estate	(Value over **$520,000.00**)
Pension Fund	(Value over **$800,000.00**)

MISSION BRANCH	Mission and 21st Streets
PARK-PRESIDIO BRANCH	Clement St. and 7th Ave.
HAIGHT STREET BRANCH	Haight and Belvedere Streets
WEST PORTAL BRANCH	West Portal Ave. and Ulloa St.

Interest on Deposits is Computed Monthly and Compounded Quarterly, and may be withdrawn quarterly.

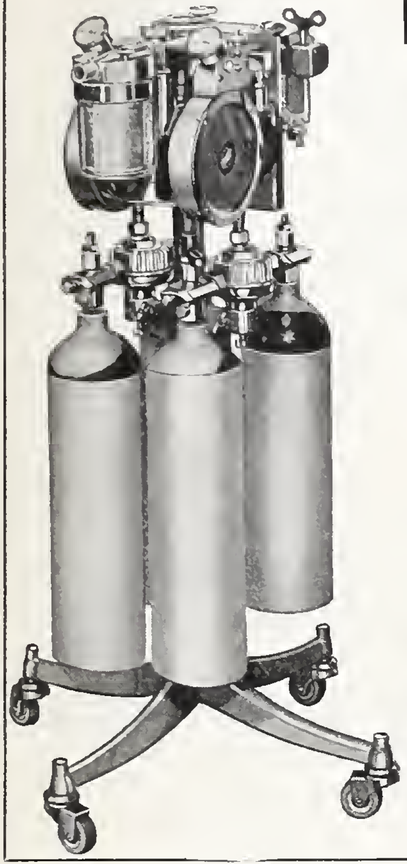
(Continued from Preceding Page)

The horse pricks up his ears and hears sounds lost entirely upon his driver. The watchmaker hears noisy indications of improper functioning in a watch whose owner asserts it ticks just as it always did, but is remiss as to accuracy. The family dog or cat, asleep on the hearth, is startled by someone approaching the house long before the footsteps are heard by human ears. A motorist can tell by ear when something goes awry with his motor, although the passengers may sense no difficulty. Adventure stories are replete with instances of uncivilized natives hearing sounds and sensing dangers with an ability that seems uncanny, but is due to keen hearing. Musicians suffer acute agonies because their supersensitive ears hear discords unnoticed to others.

Since sound is the result of vibratory motion, and the resultant creation of air waves, keenness of hearing is largely a matter of the ear's being properly attuned to vibrations. Hearing is, fundamentally, the excitation of the auditory nerve sufficient to produce an impression, or a sensation, upon the brain. The ability to hear sounds depends not only upon the functioning of the ear, but the amplitude and energy of vibrations producing the sound, the number of sound impulses in a given time, and the duration of the sound, or vibrations.

In the so-called normal ear, the sound waves, or disturbances in the air created by vibrations, are resolved into vibrations which, by simple mechanical action, communicate the impulses to the auditory nerve. Ordinarily this system of communication is a series of small bones and other structures in the ear. Interference with their proper functioning prevents efficient hearing. If the interference is continued, the person is said to be "hard of hearing," or deafened.

The so-called normal ear records sound vibrations of 30 to 30,000 per second. Persons with unusually acute hearing may sense vibrations of 35,000 per second. Vibrations below 30 per second ordinarily may be seen. Persons engaged in occupations requiring acute hearing usually develop and improve their hearing through practice. Musicians, not only hear musical notes more clearly than the average person, but



THE ANESTHETIST MUST HAVE
FAULTLESS EQUIPMENT

PERIODICALLY, we call to inspect your anesthetic equipment. This service is offered whether you use our equipment or not. It is based on the realization that *the anesthetist must have faultless equipment.* Day and night emergency service is maintained constantly for servicing and supplying apparatus for purchase or rental.

We distribute several lines of equipment, all made to the highest known standards. And, while none of it is made in our own plant, it is subjected to our own rigid inspection. The same policy of critical analyses of mechanism prevails with the same relentless vigilance as with our own medical gases. It is a fixed policy.

Certified Gases
NITROUS OXIDE ✓ ETHYLENE ✓ CARBON DIOXIDE
MEDICAL OXYGEN

CERTIFIED
LABORATORY PRODUCTS, LTD.
1379 Folsom St., San Francisco 1503 Gardena Ave., Glendale, Calif.
WEST COAST HOSPITAL SUPPLY COMPANY
Pacific Northwest Distributors
25 E. Sixth Street, Portland, Ore. 408 Battery Street, Seattle, Wash.

distinguish pitch and shading. It is said that practiced musicians can distinguish one-sixty-fourth of a semitone. Moreover, the keenly developed ear has the ability to distinguish more sounds per second than the normal ear, sometimes nine to twelve successive sounds in a second.

Some persons accurately can estimate distances by sound. The woodsman can tell how far away is an approaching thunderstorm. His trained eyes and ears give him ability to judge, although he may be ignorant of the comparative speeds of light and sound. His eye sees the lightning flash in advance of the ear hearing the noise, because light travels faster than sound. The distance to the storm is judged by knowing that ordinarily there is a difference of five seconds between the two for each mile. Sailors can tell the distance to a vessel by the time between seeing the cloud of vapor from the whistle and hearing the signal. Persons in Philadelphia heard the wartime Black Tom explosion near New York, although they were ninety miles away, and the sound was heard seven minutes after the explosion.

The ability to hear also is based upon the ability to sense sound vibrations in certain ranges. Thus the 10,000,000 deafened of the United States, and the estimated 3,000,000 school children with subnormal hearing, apparently have lost the ability to hear certain vibrations. There may be deficiencies in ear structure or disease may have affected the ear. Some of them undoubtedly hear many sounds, but are deaf to sounds falling within certain ranges; for example, 2,000 to 4,000 vibrations per second. Again, such sounds may not be entirely lost to them, but are distorted. Usually this distortion is in proportion to the loss of hearing ability. Restoration of hearing ability, then, depends largely upon the possibility of enabling them to hear sounds within certain ranges, or to hear certain sounds without distortion.

(Continued on Next Page)

Hydro-Electro and Physiotherapy Building

Alexander Sanitarium
Incorporated
Belmont, California
Telephone Belmont 40 P. O. Box 27

Hydro-Electro and Physiotherapy Treatments. Specializing in Recuperative and Nervous Cases. Homelike Atmosphere. Absolutely Modern in every respect. Inspection invited.

22 miles from San Francisco—Situated in the beautiful foothills of Belmont, on Half Moon Bay Boulevard. The grounds consist of seven acres studded with live oaks and blooming shrubbery.

Just the place for the overworked, nervous and convalescent. Number of patients limited. Physician in attendance.

Address ALEXANDER SANITARIUM
Phone Belmont 40 Box 27, Belmont, Calif.

St. Luke's Hospital

SAN FRANCISCO

A Limited General Hospital of 200 Beds

BENJAMIN H. DIBBLEE, *President*
I. C. KNOWLTON, *Secretary*

Executive Committee
ALANSON WEEKS, M. D., *Chairman*
GEORGE D. LYMAN, M.D.
HAROLD P. HILL, M. D.
W. G. MOORE, M. D.

HOWARD H. JOHNSON, M. D.
Secretary and Medical Director

Fully approved by the American College of Surgeons and the American Medical Association for Resident and Intern Training.

Limited Facilities for Part-Pay Treatment

SUN PORCH

For the care and treatment of Nervous and Mental Diseases, Selected Alcoholic and Drug Addiction Cases

Patients referred to us by attending physicians remain in their care, except under their expressed wish to the contrary. Out of town doctors are furnished with daily reports of patient.

THE PARK SANITARIUM

1500 PAGE STREET
San Francisco California
Phone MArket 0331

SEVEN YEARS' USE

has demonstrated the value of

THE SURGICAL SOLUTION
of
MERCUROCHROME,
H. W. & D.
in
Preoperative Skin Disinfection

•

This preparation contains 2% Mercurochrome in aqueous-alcohol-acetone solution and has the advantages that:

- Application is not painful.
- It dries quickly.
- The color is due to Mercurochrome and shows how thoroughly this antiseptic agent has been applied.
- Stock solutions do not deteriorate.

•

Now available in 4, 8 and 16 oz. bottles, and in special bulk package for hospitals.

Literature on request

HYNSON, WESTCOTT & DUNNING, Inc.
Baltimore, Maryland

(Continued from Preceding Page)

For many years restoration of hearing was attempted through increasing the volume of sound, or intensity of the sound impression reaching the brain of the deafened. Mechanical hearing aids, designed to augment volume, were helpful, but their use frequently had unfortunate effects upon the physical and nervous condition of the deafened. Reduction in size went only part way in relieving the embarrassment, nervous strain, and discomfort felt by those sentenced to carry an ear trumpet.

Also these hearing aids attempted immediately to restore full hearing. The effect was not only to cause distortion of some sounds, but adversely to affect the hearing ability just as sudden brilliance disrupts seeing ability when one emerges from a dark room into sunlight. Mechanical hearing aids have been handicapped also by the fact that they depend, to some degree at least, upon the proper functioning of certain parts of the ear. Were these affected by disease, and their proper functioning impaired—as frequently is the case—the device was of minor aid to the ear and to the hearing, regardless of its excellence.

British scientists, about 1903, began experiments with bone conduction as an aid to hearing. Subsequent experiments, begun in the United States about the same time, sought to find a detour around the affected parts of the ear. Since both the creation and the perception of sound are dependent upon vibration, and since vibrations cause the excitation of the auditory nerve that produces upon the brain the sensation of hearing, it was felt that so long as all or a portion of this nerve remained unimpaired it could be utilized.

Industrial Accident Commission.—This department has had presented to it various problems due to injuries sustained by relief workers. During the present economic crisis, almost every community is suffering financially and is unable to support the unemployed upon a strictly charitable basis, hence various plans

There seems to be some confusion in the mind of the lay public regarding the meaning of the word, "Clinic," as applied to the practice of regular medicine and surgery. Recently the State of California has made it mandatory that all Clinics operate under a uniform law, irrespective of their professional status. We have decided, therefore, to eliminate the word, "Clinic," as a descriptive term for our institution, effective January 1, 1934.

Doctors Soiland, Costolow and Meland

By ALBERT SOILAND, M. D.

have been adopted whereby the needy are given either the necessaries of life in the form of groceries or a small payment of money in exchange for their labor.

Before the present session of the legislature each case was decided upon the facts peculiar to it, and no set principle was adopted nor was any definite policy established.

The problem of whether or not relief workers are employees and when injured entitled to the benefits of the Workmen's Compensation Act was presented at the recent meeting of the legislature and two amendments to the Act resulted. A comparison of these amendments furnishes a test as to whether or not a worker is an employee.

The first part of the enactment would exclude from the definition of employee as found in Section 8 (*a*) of the Act, "any person or persons who perform services in return for aid or sustenance only, received from any religious, charitable or relief organization," whereas a new section (12½) of the Act would base compensation due any injured employee while engaged in unemployment relief work solely upon the monthly earnings or anticipated earnings while so engaged.

It would seem that the legislature excludes from the benefits of the Workmen's Compensation Act those who receive aid in the form of sustenance only and would embrace all relief workers who are paid for their efforts in money.

Junior Red Cross.—The Red Cross was taken originally into the schools of the United States because teachers and pupils wished to take an active part in its inspiring program. Today, developed by fifteen years of growth, the Junior Red Cross has more than fulfilled its mission. It has given to millions of American boys and girls opportunity for voluntary civic service in worthwhile activities. Junior Red Cross members everywhere are helping to solve the problems of their communities, their country and the world.

Misinformation Cannot Lead to Truth

Misinformation is a pernicious thing. The doctor sees its work in widespread response to "quack" remedies, the "sure cures" which beguile the unenlightened.

Misinformation about Pasteurized Milk, too, is widespread. Golden State Company, Ltd., while it can supply milk of any specification, recommends Certified or Grade A Pasteurized, and continually educates its customers to the merits of these superior grades. In this recommendation, this Company knows that it has true friends in the medical profession.

Public and private research continually records the benefits of pasteurization of milk for human consumption. Another recent contribution to knowledge on the subject is reported in the Connecticut Experiment Station Bulletin 340 (July, 1932), entitled "The Food Value of Milk." An excerpt (Page 674) follows:

> **". . . Infants appear to utilize the protein from heat treated milk rather more readily than that from untreated milk, since in the former case undigested protein curds do not appear in the stools."**

Perhaps a patient of yours has ill-advised notions about milks. Your word would inform. Prescribe Golden State Pasteurized Milk. You can depend upon the Golden State Brand to bring you pasteurized milk at its finest—efficiently pasteurized—*with all of milk's fine, full, natural flavor retained.*

GOLDEN STATE DAIRY PRODUCTS

Golden State
COMPANY, LTD.
Plants Throughout California

Research Laboratories located at
425 Battery Street, San Francisco
1120 Towne Avenue, Los Angeles

Colfax School for the Tuberculous

Colfax, California

(Altitude 2400 feet)

This institution is for the treatment of medical tuberculosis and of selected cases of extrapulmonary (so-called surgical) tuberculosis.

The Colfax School for the Tuberculous consists of five Hospital Units with beds for patients who come unattended and a Housekeeping Cottage Colony for patients and their families.

The Colfax School for the Tuberculous offers the following advantages:

1. Patients are given individual care by experienced tuberculosis specialists. The patient is treated according to his individual needs.

2. Patients are taught how to secure an arrest of their disease, how to remain well when once the disease is arrested, and how to prevent the spread of the disease.

3. Patients have the advantage of modern laboratory aids to diagnosis and of all modern therapeutic agencies.

4. The climate of Colfax enables the patient to take the cure without discomfort twelve months in the year. We believe climate is secondary to medical supervision and rest, but the fact remains that it is easier to "cure" under good climatic conditions than where these climatic conditions are absent.

5. Colfax is accessible. It is on the main line of the Ogden Route of the Southern Pacific R. R. and has excellent train service. It can be reached by paved highway, being on the Victory Highway, with paved roads all the way to Colfax.

For further information address

ROBERT A. PEERS, M. D., *Medical Director*
Colfax, California

THE LIBRARY
UNIVERSITY OF CALIFORNIA
San Francisco
THIS BOOK IS DUE ON THE LAST DATE STAMPED BELOW

7 DAY LOAN

7 DAY
DEC 11 1973

RETURNED
DEC - 5 1973

7 DAY
DEC 12 1980

RETURNED
DEC 10 1980

15m-6,'73(R1768s4)4315-A33-9

SI

31912